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THE ANNUAL SESSION, IN THE SEVERAL SECTIONS, TOGETHER WITH THE

MEDICAL LITERATURE OF THE PERIOD

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SOME UNHEALTHY TENDENCIES IN THERAPEUTICS *

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WASHINGTON, D. C.

In the beginning I wish to express to the Section my very great appreciation of the honor paid me in the election as your Chairman for this year. As custom has directed that the Chairman shall prepare and deliver an address at the opening meeting, I have chosen for my subject a discussion of some matters that should be of great concern to all of us, rather than a discussion of a particular topic of therapeutics.

The soundest basis and the one most to be desired for all therapeutic procedures is one founded on experimental results; or, lacking in this, a method based on sound theoretic considerations. Therapeutic procedures inaugurated on any other basis than these are empiric. It should not be forgotten, however, that some of our most valued remedies were, in the beginning at least, empiric until later researches had developed an experimental basis for their continued use.

In recent years there has been manifested a very marked tendency to the use of certain agents or methods for therapeutic purposes which, unless checked, will, in the reaction that is bound soon or late to follow, have an unfortunate effect on progress in therapeutics. Many of these agents in the method of their exploitation almost force one to the conclusion that financial gain of the proposer or of the producer is the sole basis for their exploitation. Aside from the exploitation of the sick for selfish or financial considerations, the use of some of these agents (it really does not seem proper to call them remedies or treatments), on account of the possibilities for harm possessed by them, presents a question demanding immediate and serious consideration.

We know that the injection into the body of certain toxic substances may produce a certain primary reaction, but we know little of the secondary or remote effects when such substances are introduced into the circulation or are given hypodermatically. We know less about the primary effects of the introduction of many other toxic substances now used for therapeutic purposes and nothing of their secondary or remote action. No doubt many of them in their secondary effects do the body permanent harm and thus may reduce the natural resistance against disease.

These unhealthy tendencies — and I do not hesitate so to term them — in therapeutics have of late been particularly evidenced in regard to the use of certain biologic products. It has not been long since physicians were teaching that drugs given by the mouth would cure or relieve many morbid conditions, but now it seems to be the fashion to teach that in order to obtain a surer and more lasting effect it is necessary to introduce the drug into the body parenterally. This may be due in part to the extensive propaganda for the use of certain biologic preparations carried on by some of the users and manufacturers.

The mode of administration appears to have cast a spell not only over the laity, on whom a method unusual to them may be expected to have a psychologic effect, but also on some physicians who seem easily persuaded to ascribe virtue to parenteral administration of almost any preparation. It may be granted that some effect can be readily produced by subcutaneous or intravenous injection, but that this effect is of real benefit to the patient is another matter.

Some of the agents which have been put forward and for which extravagant claims have been made clearly belong in the class of preparations known as "fake remedies," while others, with but little more value on account of being similar to preparations of proved value, are not so placed. Among the number of these preparations are the Friedmann vaccine, the Duket treatment, and other preparations for the tre ment of tuberculosis; solutions of rattlesnake for the treatment of epilepsy and many of ditions; the metabolic products of variou the treatment of rheumatism and other bacterial vaccines for the treatment of non-bacterial origin; mixed bacterial vacci general treatment of almost all the ills that the animal the ism is subject to; mineral oil for the treatme kes every form of constipation; serums for many co ditions; antirabic virus for the treatment of infantile paralysis and epilepsy, and the numerous advertised or recommended "cures" for pellagra.

It may not be unprofitable to say just a few words in regard to some of the preparations just mentioned. First of all comes the Friedmann vaccine for tuberculosis, on account of the wide-spread publicity it has received and the many who had their hopes of recovery awakened only to be doomed to bitter disappointment. This proposed treatment for tuberculosis consists of a suspension of acid-fast bacilli, claimed by its introducer to have been originally obtained from a turtle infected with tuberculosis. It was claimed by its proposer to be non-virulent, non-toxic and harmless and that non-tuberculous persons and animals could be immunized against tuberculosis with it and that human cases of the disease were cured by its use

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* Chairman's address, read before the Section on Pharmacology and Therapeutics at the Sixty-Fifth Annual Session of the American Medical Association, Atlantic City, June, 1914.

Careful and impartial investigations made by the United States Public Health Service early showed that the extravagant claims made by Friedmann were not substantiated, and later reports from many investigators have shown that the vaccine is not entirely harmless, and that the course of the disease in those treated is but little if at all favorably influenced. Indeed, evidence is accumulating that, in some cases at least, the patients have been distinctly harmed by the vaccine. It would appear that this much-advertised treatment for tuberculosis as yet presents no justification for its endorsement or use by physicians. It is to be regretted that there does not appear to be any way by which its exploitation and use in so-called "institutes" within a state can be prohibited by local health authorities, either on the ground of false pretenses or as being dangerous to the public health.

Another so-called treatment is the use of solutions of crotalin or rattlesnake venom. This preparation has been chiefly recommended for the treatment of epilepsy, but some of its proposers having very great confidence in its properties also claim that it can cure tuberculosis, and have advised its use for the treat[illegible] of lumbago, sciatica, neuritis, asthma, hay-fever, [illegible]ca, nerve exhaustion, bronchitis, neuralgia, insomnia, debility and pleurisy. From a perusal of the reports of cases treated with crotalin solutions it does not seem that the treatment is of any permanent benefit in epilepsy, and there certainly does not seem to be any evidence that it can cure the numerous other conditions for which it has been advised. There is, on the other hand, evidence of the harmfulness of the treatment, and death has been reported as a result of the use of solutions bought on the open market containing gas-forming anaerobic bacteria. It has been found that 38.8 per cent. of samples of crotalin solutions examined in the Hygienic Laboratory contained living bacteria, and that in the majority of instances the contamination was with anaerobic gas-forming bacteria similar to that found in the fatal case.

In the crotalin solutions we have a proposed treatment for conditions as unrelated as tuberculosis and [illegible]psy and a treatment absolutely without a sugges[illegible] an experimental basis. While the injection of [illegible] venom in large amounts may produce a [illegible]abolic disturbance and even in small quan[illegible] a profound psychic impression, it does not [illegible] it will actually cure any disease for the [illegible]nt of which it has been proposed; but, on the [illegible] hand, there is unimpeachable evidence that it [illegible] do harm and even cause death.

The essential basis of what is generally spoken of as "vaccine therapy" is the use of the specific organism or its products, but the use of such preparations has gone far beyond this limitation. We now have it advised not only that the specific organism be used, but also that, when the specific organism is not known, a mixed vaccine or the mixed products of a number of organisms[1] be used in the hope, it is to be supposed, that one of them may exert some specific action. Bacterial therapy undoubtedly in some cases is a most valuable method of treatment; but when the claim is made that a combination of the dead bodies or the filtered products of a number of different bacteria are useful for the treatment of certain diseases with a different specific cause, it would seem that the suggestion closely approaches quackery.

Practices such as these do more to bring bacterial therapy into disrepute than does the failure of vaccine therapy when found not to be effective in certain cases, even though scientifically applied.

It is not necessary for me to detain you longer with a discussion of the claims and value of the preparations put forward for the treatment of diverse conditions, few of which, in my opinion, have any greater justification for their use than those mentioned. But I wish to say just a few words as to the way in which these unhealthy tendencies may be checked. In the position somewhat of an outsider, I have given this question considerable thought and it has appeared to me that the situation is one for which the physician is largely responsible, and that therefore its amelioration is to a certain extent in his hands. If physicians were not so eager to listen to the claims of the proposers of new methods of treatment and to "try them out" (of course, on the poor patient) before their value had been properly demonstrated by reliable investigators, it would seem that the exploitation of unproved preparations must prove to be unprofitable and lacking economic incentive.

Aside from the doubtful practice of the indiscriminate use of unproved methods of treatment, it has seemed to me that a great injustice is done the patient by their use, since some of the preparations that have been widely exploited have been shown to be harmful in certain instances and even to have caused death. So the first step in attempting to remedy conditions is to awaken the physician to the importance of ignoring the claims of those who are pushing these new methods until their usefulness and harmlessness has been clearly demonstrated by those best in a position to do so.

The work of the Council on Pharmacy and Chemistry of the American Medical Association, while a step in the right direction, should be further elaborated by securing authoritative information from those in position to furnish it regarding the status and value of new products. The influence of the information so secured could be further augmented by teaching in the medical schools the embryo physician to hold fast to that which is proved rather than to seek those things still lacking proof.

Advances are necessary, and clinical trials must be made; but those trials should be with adequate controls of untreated cases and under circumstances in which every stage can be watched and the various clinical and laboratory observations made a matter of unbiased record and the interests of the patients guarded. It is difficult to secure these conditions outside of a well-equipped hospital. Until a new method of treatment has received abundant confirmation of this sort it is unjust — to use no stronger word — to apply it promiscuously to patients who are not under constant observation and are not amenable to instant emergency relief.

Preparations offered for sale should clearly indicate by label or otherwise whether or not the product is experimental or its value thoroughly well established. With a differentiation of this kind the physician in active practice would not be misled and would not mislead his patient into believing that thoroughly well-established measures are being applied.

The supervision of the federal government, through the Public Health Service, of the manufacture and interstate sale of biologic products has resulted in

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[1] As, for instance, Phylacogens.—Ed.

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great good in safeguarding the purity of many of the preparations and in enforcing standards of potency where such have been established; but additional authority must be given by certain amendments to the present law.

Not only sales, but also actual attempts to ship contaminated or dangerous biologic products in interstate traffic should be prohibited. This provision in the case of biologic products would be a safeguard not only to the public, but also to reputable and conscientious manufacturers.

In the case of the large class of agents which are being advocated solely for gain, and which are advertised and sold with evident fraudulent intent, not only should provision be made to exclude them and the advertising relating to them from the mails, but their shipment in interstate traffic should also be prohibited. After all, however, it devolves on the medical profession to use wise discretion in the endorsement and use of preparations, and in this respect it has a large responsibility.

RESEARCH IN OPHTHALMOLOGY, AND THE TRAINING OF OPHTHALMOLOGISTS

THEIR PROMOTION AND ENCOURAGEMENT THROUGH THE ESTABLISHMENT OF TEACHING FELLOWSHIPS *

FRANK C. TODD, M.D.
MINNEAPOLIS

As Chairman of the Section on Ophthalmology of the American Medical Association, it is my duty and pleasure to bid you welcome to this, our thirty-fifth annual meeting.

Permit me first to express to you my most cordial thanks for the honor you have conferred on me. The record of this Section and the distinction of my predecessors make me realize that the honor is a great one, and also cause me to feel a diffidence in assuming the office which they have so well filled.

The work of the year has largely fallen on an experienced and efficient Secretary, and it has been a pleasure to cooperate with him in the management of the Section work.

The duties connected with the position of Secretary of this Section are considerable. Not only is he expected to conduct a large correspondence and to manage the business of the Section tactfully and efficiently, but also he must devote a great deal of time and energy in its behalf. That the work of the Section for many years has been so well conducted is largely due to the interest that has been shown by our secretaries. But even though we may complacently accept such service and reward our Secretary only with appreciation and thanks, it is time that we should by some manner of means provide for the not inconsiderable expense that every Secretary of this Section has to bear. I am not here going to suggest whether or not such expenses necessary to the conduct of this part of the Association's work should be borne by the Association, but I wish to recommend that some steps be taken to remove this imposition.

THE SCIENTIFIC PROGRAM

We trust that the program will meet your approval. It has been made up largely of voluntary contributions. We have tried to follow the plan of my immediate predecessor in securing papers from those who have not often appeared on the program and have asked some of the older men who have frequently contributed to give way, which they have most obligingly done. We shall have the benefit of the judgment of many of these men in the discussion on the papers that will be presented.

SYMPOSIUM ON GLAUCOMA

It was thought wise by your officers to discuss the subject of glaucoma especially in its relation to the newer methods of operative treatment, because of the timeliness of the subject, and the report on the operations performed in this country by Lieutenant-Colonel Elliot last fall would seem to be especially worthy of study. This report has been well tabulated by Dr. Parker in his paper, which is a part of the symposium on this subject, and there will be included three other papers, one of which bears on the late infections following sclerectomy, and one on the subject of non-surgical treatment.

COMMITTEE TO INVESTIGATE NEWER METHODS OF TREATMENT OF GLAUCOMA

Like all advances, particularly of a surgical nature, the profession is liable to go to an extreme in the adoption of these newer operations for glaucoma, resulting then in a reaction when the pendulum may swing too far the other way. That a real advance has been made there is no question. It remains to be determined just what the degree of that advance is going to prove to be, and the solving of this question involves many considerations which the profession and the many suffering from this malady are impatiently awaiting. These questions are not satisfactorily answered by any one man or by several, as the result of their individual experiences. This fact is self-evident and is further borne out by the varying opinions we see expressed by those whose judgment we all respect.

It is a subject which deserves to be further scientifically investigated as soon as possible, and it can best be studied in the manner which this Section has heretofore adopted. I refer to the plan so well set forth by Dr. Wilder in his Chairman's address before this Section: that of the appointment of committees for cooperative scientific investigation of specific subjects. Such a committee carefully selected can gather the data pertaining to this new work and suggest uniform methods of recording observations, and can otherwise perform a valuable service. Their report should prove to be a guide for fellow ophthalmologists that should result in inestimable value.

FOREIGN GUESTS

It is with pleasure that I call your attention to the fact that one of our neighbors, well known by reputation to ophthalmologists of the United States, has accepted our invitation to participate in our proceedings — Dr. W. Gordon M. Byers of Montreal.

During the meeting of the International Congress of Medicine in London last summer, after a conference with many of your prominent members who were there present, an invitation was extended to Professor Axenfeld to attend and address this meeting. This

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* Chairman's address, read before the Section on Ophthalmology at the Sixty-Fifth Annual Session of the American Medical Association, Atlantic City, June, 1914.

invitation was accepted. We were much disappointed when only on June 11 we received a letter from our expected guest stating that owing to the serious illness of his father, he would be unable to attend.

THE KNAPP TESTIMONIAL

At the suggestion of Drs. Posey and Bulson, ex-Chairmen of the Section, a fund has been created called "the Knapp Testimonial Fund," in honor of the late Hermann Knapp. The originators of this enterprise had in view the furthering of scientific work, and incidentally the advancement of the interests of this Section. As a direct consequence of the establishment of this fund, the Knapp Testimonial Committee has been enabled to assist in the publication of some valuable contributions, which otherwise could not have been presented before our Section. It has enabled us to secure the bound *Transactions* of the Section and the "Ophthalmic Year-Book" at a reduced price, and it has also been the means of relieving the officers of the Association and members of the Executive Committee of some incidental expenses in connection with the Section work which are not borne by the Association. Up to this time the Committee of Award has not seen fit to present the medal to any contributor, but I am happy to announce that a contribution to our program has been deemed worthy of conferring this distinction on its author and at this meeting we are to witness the first award.

THE YEAR-BOOK

The Knapp Testimonial Committee, which has helped supply the funds to pay the cost of the Year-Book, will have a report to make concerning the continuation of that valuable publication. It seems that not only have we consumers been enjoying the benefits of the gratuitous and efficient services of the editor of that publication, but also he has been obliged to make up a considerable financial deficit each year. This shows a science-loving and generous spirit on the part of the editor, but it is a condition of affairs that cannot continue, and those of us who enjoy the profits of his labors must find a way to relieve the situation. The imperative necessity of the continuance of the publication of the Year-Book would become evident the moment its publication were discontinued, and to prevent that catastrophe some decisive steps must be taken which will permit its publication without a deficit. The Knapp Testimonial Committee will offer a solution of the problem and it is hoped that the plan they propose will meet a ready acceptance. The Knapp Testimonial Fund is deserving of the support of every member of this Section, for by means of it we are enabled to promote scientific work and further the interests of this Section in a way that otherwise would not be possible. It is hoped, therefore, that the enterprise will continue to receive the hearty support of every member of this Section.

PROMOTION OF RESEARCH

There could be no worthier object than that of stimulating the development of scientific research work and the medal of award should serve as a stimulus. It is evident, however, that something more is required than reward to bring out research work and create research workers.

It would be well worth while to make a study of the various reasons why there are not more productive research workers in ophthalmology in America with a view to correcting the defect, and with a hope of increasing the number. The present methods of training do not tend to encourage the development of research workers. They do not furnish the opportunity and stimulus needed. There are unquestionably men fitted and anxious to do research work in ophthalmology who lack the means and opportunity. To provide for such men, scholarships should be created in universities equipped with the proper facilities for the carrying on of such work. This leads me to the subject on which I wish briefly to address you: the promotion and encouragement of research in ophthalmology and the systematic training of ophthalmologists through the establishment of teaching fellowships.

TEACHING FELLOWSHIPS

An opportunity for the creation of a certain number of scholarships exists in all high-grade medical schools, where suitable material is at hand for clinical experience in ophthalmology, and where other facilities requisite for proper training exist. Such universities could well employ full-time men on small salaries in the capacity of teaching fellows. The students filling such positions would thus be provided with sufficient means to pay their expenses during their entire course, such recompense increasing each year as the student becomes more valuable in the teaching department of the university. The university utilizing such students as assistants in the conduct of its ophthalmologic clinic and laboratory, and after the first year assisting in the instruction of undergraduates, will find such full-time men valuable in the conduct of the department. Such students will be more satisfactory not alone because of the fact that they will be full-time men, but also because their attention will not be diverted by the demands of private practice. Furthermore, the discipline of the department will be much better. Thus it is evident that in the adoption of such a system of teaching fellowships the university will not only thereby establish proper courses in the education of specialists, but it will also profit in the conduct and teaching in the undergraduate department.

Two universities, Michigan and Iowa, have been compelled to employ men for a period of two or three years, because of the fact that they are situated in small towns, where assistants in ophthalmology are not to be had otherwise. They have found such men useful in the conduct of the undergraduate school. In effect they have thus been training ophthalmologists in a better manner than is yet provided.

An elaboration of this plan with the provision of a systematic curriculum will afford an opportunity for more students to take such a course in certain universities with or without remuneration. Or a competition may be provided for such fellowships during the first year of the course, the better positions of the second and third year being awarded to the most deserving. It is easy to conceive of the opportunity that may exist for the development of research work in the process of such a course, and it would be highly desirable for universities offering such courses so to arrange the curriculum that encouragement may be given to those desiring to do research work.

Though only the few are cut out to do continuous and painstaking research work, many could and would be able to study out some problems if they knew how to go about it. Most men who have the inclination to undertake some original work find, as time progresses, that their research work or scientific studies are hampered or stopped by the demands of a growing and busy practice; but it is an unfortunate fact that many do not realize the opportunity for study and research, do not see the problems which the leisure of their earlier experience might permit them to solve, until they become so busy in practice that they cannot enter on such work. It is largely the beginners, the young men in our profession, to whom we must look for such advances. During the years they are waiting to build up a practice there is so much that could be done in the line of original investigation and scientific study that those who are busy with the demands of routine practice envy them their time and opportunity.

More important still is the production of more well-trained ophthalmologists. Those who are to-day practicing ophthalmology have secured their training through serving as assistants to some busy ophthalmologist or as interns in an eye-hospital, or as a consequence of taking postgraduate courses, too often courses that are too short and inadequate.

All of these methods teach only clinical ophthalmology, and give a most deficient preparation at best in the fundamentals that should be the foundation of the preparation of a specialist in ophthalmology. Thanks to the suggestion of the late Alvin Hubbell in his chairman's address before this Section, and the more persistent efforts of Edward Jackson, we are just beginning to realize the necessity for such systematic training.

THE SYSTEMATIC EDUCATION OF THE OPHTHALMOLOGIST

It is evident that many medical students do not know their bent until after graduation, and must wait until they have served an internship in a general hospital or have tried themselves out in general practice before determining on the specialty in which they wish to engage. An ideal preparation as an ophthalmologist would seem to start during the student days of the aspirant for this highly developed and distinct specialty in the practice of medicine. From this it should not be inferred that I mean that the ophthalmologist should fail to secure the regular medical training that is required for all aspirants for the degree of Doctor of Medicine. But I do mean that should the student realize that he is later to make a specialty of ophthalmology, his course should be so shaped as to secure knowledge which will prove of greatest advantage to him in his specialty, and he should devote less time to work which is wholly irrelevant.

In whatever branch of endeavor, whether it be medicine or music, art or that of a mechanic, the earlier in life the aspirant begins his work the better, and however much benefit may be secured toward the development of a broader culture in the pursuit of subjects not related to the particular field of endeavor, the more purposeful the education, the greater will be the resulting efficiency. In this connection, and as evidence of the fact that early preparation makes better ophthalmologists, Jackson's investigations concerning the time after graduation when ophthalmologists enter on their special work are instructive. He showed that with very few exceptions successful ophthalmologists in America undertook their special preparation very early after graduation, that is, immediately or within five years after securing the M.D. degree.

Of course, the fundamental idea in the assertion that five or ten years should be spent in general practice preliminary to undertaking the study of this specialty has some merit. It lies in the acceptation of the fact that specialization is apt to lead to narrowness. There are many things a student might learn in the course of general practice which would be of benefit to him in his later practice of ophthalmology; but during such a prolonged period the student would be obliged to spend the major portion of his time in work which would be of no particular value to him later, and that which is of such value could be better learned and in a much shorter period of time in collegiate work (postgraduate, of course) under the supervision of trained teachers. During these years the student's mind and fingers are more plastic than at a later period, and it is highly desirable that the student secure his training for his life work during that period.

At present, however, all opportunities for the preparation of an ophthalmologist are at fault in the other direction. The physician preparing for this specialty now devotes his time during his preparatory course too exclusively to ophthalmology and particularly clinical ophthalmology, and does not study those other branches of medicine, which, though not ophthalmologic, are closely related to ophthalmology, a knowledge of which is necessary to acquire a proper foundation for the study and practice of ophthalmology proper. If then we are to make this change in the method of preparing an ophthalmologist, in beginning immediately or within a year after graduation from a high-grade medical school, we must supply in a concentrated form the knowledge of general medicine and the other specialties requisite to a broad understanding, that would otherwise be gained, slowly, but not so well, in a long period of general practice. It is just during these preparatory years that the physician should acquire the broader knowledge of these related subjects if he is to prepare himself properly and avoid the extreme specialization which creates narrowness. Such courses cannot well be given by ophthalmologists or in ophthalmic hospitals, but may be given most efficiently in universities properly prepared for general medical teaching. A large portion of the time during a prolonged postgraduate course would thus be devoted to such subjects and a rather definite curriculum should be laid down providing for advanced courses in the laboratory branches, namely, anatomy, physiology, pharmacology, pathology, neurology, bacteriology, etc. Later the student should have the opportunity, under the supervision of trained teachers in those subjects, to pursue the studies connected with general medicine and surgery so far as they are related to ophthalmology. Inasmuch as the subjects of otology, rhinology and laryngology are closely related to ophthalmology, and because most ophthalmologists likewise practice in diseases of the ear, nose and throat, he should have ample opportunity to pursue the study of those branches.

During the pursuit of the laboratory and correlated clinical branches he should be given an opportunity to elect certain work and should be encouraged to undertake the solving of some special problems with the hope that some, at least, of such students would become imbued with the research spirit.

The entire course in the preparation of an ophthalmologist could thus be taken in a university, or one or two years could be spent in a university, where the student would pursue a regular, systematic course, followed by a year or more in strictly clinical work in an ophthalmic hospital. It would seem that at least two years is none too long for the systematic and thorough preparation of an ophthalmologist, and if the student is to be prepared also in ear, nose and throat, a course could be arranged covering a period of three years.[1]

This rather brief comment on the education of an ophthalmologist is not intended to be full and explicit, but rather to emphasize the importance of the work, and thus pave the way for the more detailed report of our committee on education, which will cover the entire field of the teaching of ophthalmology to undergraduates and graduates in medicine. In their report I bespeak your interest, and in this work your cooperation. The subject of the preparation of ophthalmologists and the production of research work opens up a new field of usefulness, and it is a proper function for this Section to investigate and direct such work.

RECAPITULATION

At present physicians desiring to take up ophthalmology as a specialty can look to no systematic course.

Too many undertake special work after having taken a very short course in some postgraduate medical school, and thus become incompetent and unsafe practitioners.

Others sincerely desiring to prepare themselves properly and spend sufficient time, are often unable to outline their own course properly, and find none prepared for them.

Such men usually prepare themselves clinically, but do not secure the proper laboratory training, or sufficient training in subjects correlated to ophthalmology.

The course should be carefully systematized and arranged to prepare a student properly in the fundamental laboratory and clinical branches related to ophthalmology.

An effort should be made to discover among such students natural research workers, and facilities and encouragement should be offered to promote research work.

The natural and already prepared place for such courses exists in high-grade medical schools having proper facilities for such instruction.

The entire course may be taken in such a university if sufficient clinical material is to be had, or it may be supplemented by an internship in an eye hospital. An exchange of students between universities offering such courses for short periods of time could be arranged with benefit to the students.

Degrees should be granted on the completion of thorough and satisfactory work. The requirements and the nature of the degree should be uniform in all colleges granting the degree.

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[1] Since writing the above I have received a copy of the report of the Committee on Diploma in Ophthalmology of the American Ophthalmological Society. This report was framed by Drs. de Schweinitz, Standish, Risley, Jackson and Weeks and makes certain recommendations concerning the character of and the requirements for a degree in ophthalmology. The standard recommended and the suggestions made are most excellent.

Industrial Insurance.—Industrial sickness insurance constitutes a logical means by which society may equitably distribute the costs resulting from physical inefficiency. No sound argument can be advanced against the propriety of establishing systems of industrial sickness insurance nor against the economic necessity for such systems.—J. W. Schereschewsky, *Public Health Rep.*

PAINLESS TUMORS OF THE SPINAL CORD *

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In 1896, at a meeting of the New York Neurological Society, I presented two cases of tumor of the spinal cord,[1] found at necropsy, in which the patients had not complained of pain. Since that time, several other examples of spinal cord tumor have come under my observation in which the characteristic root-pains were absent; and a recent review of the literature has shown that in a very considerable number of recorded cases pain is either not mentioned, or else the specific statement is made that it was slight or wanting. What the proportion is it is hard to say.

In a summary of published cases on this subject in 1904, Malaisé[2] stated that 5 per cent. of extramedullary tumors were painless; and Serko, in a recent review of the German literature,[3] found that the neuralgic state was absent in one-half of all the extramedullary tumors, and of these atypical cases 16 per cent. (intradural) and 29 per cent. (extradural) ran their course entirely or almost entirely without pain. It seems to me at present impossible to rely on published case-reports to determine what percentage of spinal cord tumors run their course without pain, since in the absence of this symptom, which is relied on more than any other for diagnosis, an operation is rarely performed, and, consequently, correct diagnosis is not reached unless a necropsy is done.

That pain may be entirely absent in cases in which the other symptoms are typical of spinal cord tumor, and in which in one way or another proof is finally offered that such tumor exists or, more frequently, existed, is no longer open to question. Since the publication of my paper in 1896, references to similar cases may be found in literature. The following is such a case, which, by reason of the absence of pain and the great curvature of the spine, was long regarded as a case of Pott's disease.

Case 1.—Intramedullary sarcoma lower cervical and upper dorsal cord. Three years' duration. No spontaneous pain. Infectious disease causes temporary recession of symptoms. Laminectomy, but removal of tumor impossible. Perfect surgical recovery.

History.—L. G., a schoolgirl of 14, entered the third division of the Neurological Institute March 28, 1912, suffering from paraplegia so profound that she was unable to stand or walk. This condition had begun three years before, during a long convalescence from measles. At first, the only difficulty was an increased fatigability in the legs and feet, with the feeling as "though she would sink or as though her feet would go out from under her." When she tried to run, or to go up-stairs, she felt pain between the shoulder-blades and in the small of the back. The motor disability progressed, and within two months of the onset she began to get awkward and would stumble and fall. The condition remained stationary until eleven months before admission (February, 1911), when the left foot began to drag; then both legs became progressively worse, so that on admission she could neither walk nor stand. At no time has there been any disturbance of the sphincters or any spontaneous pain.

Examination.—The patient is a well-nourished girl, with a right scoliosis including the dorsal vertebrae from the

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* Read by title at a meeting of the American Neurological Association, held at Albany, N. Y., May 7, 1914.

[1] Bailey, Pearce: Jour. Nerv. and Ment. Dis., March, 1896.

[2] Malaisé: Arch. f. klin. Med., 1904, lxxx.

[3] Serko: Ref. Neurol. Centralbl., 1914, No. 7.

second to the eleventh with the shortest curve from the eighth to the eleventh. She turns in bed with her back held stiff as though she were suffering, but says she has no pain and the back is not painful on pressure. The paralysis of the legs is so complete that she can hardly draw them up 2 or 3 inches in bed. The type of the paralysis is spastic with knee-jerks and ankle-jerks positive, double Babinski, Oppenheim and ankle-clonus. All the symptoms are more marked on the left. The abdominal reflexes are absent. There are no symptoms in arms or in cranial nerves. There is a corset-shaped zone of profound anesthesia for touch, less profound for temperature and pain in the distribution of the dorsal segments from the fourth to the tenth. Below this there is hyperesthesia to all forms of sensibility, still more pronounced for touch.

There has been a discharge from the ear since the attack of measles, and the day after admission the patient developed right otitis media, followed by suppurative mastoiditis which was successfully operated on by Dr. E. B. Dench. During this time she had high fever, leukocytosis and other signs of septic infection. She recovered quickly from this acute illness, and about ten days after the operation on the mastoid, began to improve in a remarkable degree. She soon could move her legs about in bed, and May 1, was able to walk with a cane; June 3, the corset zone of anesthesia had diminished in size, especially on the right side, and in lower areas, the right side showed less hyperesthesia than the left, the right abdominal reflex had returned, and the Oppenheim reflex had disappeared. The other signs were the same except hat the spines of the seventh cervical and the first dorsal vertebrae were now sensitive to pressure.

There had been a great difference of opinion on the part of the physicians of the hospital as to the neurologic diagnosis in the case, the majority voting for tuberculosis or syringomyelia, the scoliosis and the absence of pain being the determining reasons. But the magical return of function in sequence to the purulent infection of the mastoid made some of us incline very strongly to the belief that a tumor existed and had been advantageously acted on by the toxins manufactured in the ear. No operation was decided on, however; the patient was fitted with a brace, left the hospital and went home.

Second Admission.—The patient reentered the hospital Oct. 23, 1912, with the history that she had been doing well during the summer, but that in the past four weeks the difficulty in walking was getting worse. Examination of motor functions gave practically the same results as the last examinations, except that the left lower extremity was much more involved than the right. The anesthesia had increased so that now it involved both trunk and legs from the fourth dorsal segment down. There was some sensibility preserved in the sacral distribution on the right side, and in the other anesthetized areas there was some preservation of temperature and pain sensibility. A Wassermann test of the blood and cerebrospinal fluid was negative. The cerebrospinal fluid showed twenty-four lymphocytes per cubic millimeter with great excess of globulin.

Operation and Result.—The operative procedure, carried out in two stages by Dr. C. A. Elsberg, was the following: Nov. 12, 1912, the first operation showed a brownish-red tumor within a capsule, lying under laminae of the sixth, seventh and eighth cervical and first dorsal vertebrae. The tumor was intramedullary and had burst through the posterior surface of the cord (Fig. 1).

July 23, 1913, the second operation showed the tumor well extruded from the cord but still connected to it by firm infiltrations, so that it could not be removed. Sections were taken for microscopic examinations.

The patient made a rather slow recovery from the first operation (Nov. 12, 1912) owing to the fact that the wound opened and had to granulate from the bottom. Two days after the operation she said that she "could feel her legs better." The power began to return slowly in the legs and with this the sensation began to return to some degree below the knees.

One month after the first operation (Dec. 12, 1912) she could move the legs around in bed much better than formerly, but still was unable to walk or stand. Examination at this time showed little change in the motor signs except that the signs of spasticity were receding in the right leg. Sensation, however, had improved considerably. For light touch there was a corset-shaped band of anesthesia from the fourth dorsal to the first lumbar segment which extended down on the right thigh (anterior surface) for a short way. Below this there was hypesthesia about equal on the two sides. The loss of pain sensation was still less. The corset zone of analgesia extended from the fourth to the tenth dorsal segment on the left side and to the twelfth dorsal segment on the right. Below these levels the hypalgesia was of only slight degree. Temperature sense was still less affected there than for pain, as there was no true thermic anesthesia, only hypesthesia from the fourth dorsal segment down.

The muscular power gradually returned to the legs and, in the early part of January, 1913, the patient began to walk with the aid of two canes and later one, and when she was discharged from the hospital, Jan. 30, 1913, she walked out. While the power of her legs was increased, there was practically no change in reflexes. The corset-shaped band of anesthesia remained about the same as when last noted, and was the same for all forms of sensation. Besides this, there was an irregular stocking-shaped anesthesia of the right leg and foot below the knee, extending higher in front. Above the anesthetic area, there was now a hyperesthetic area involving both arms, and bands extending from the fourth dorsal to the fifth cervical segment. This was the first affection of sensibility in the upper extremities. On account of the obvious motor improvement, the secondary operation was postponed and the girl discharged. After her return home the patient's general condition remained about the same. She walked around the village with the aid of a cane. Occasionally she would come

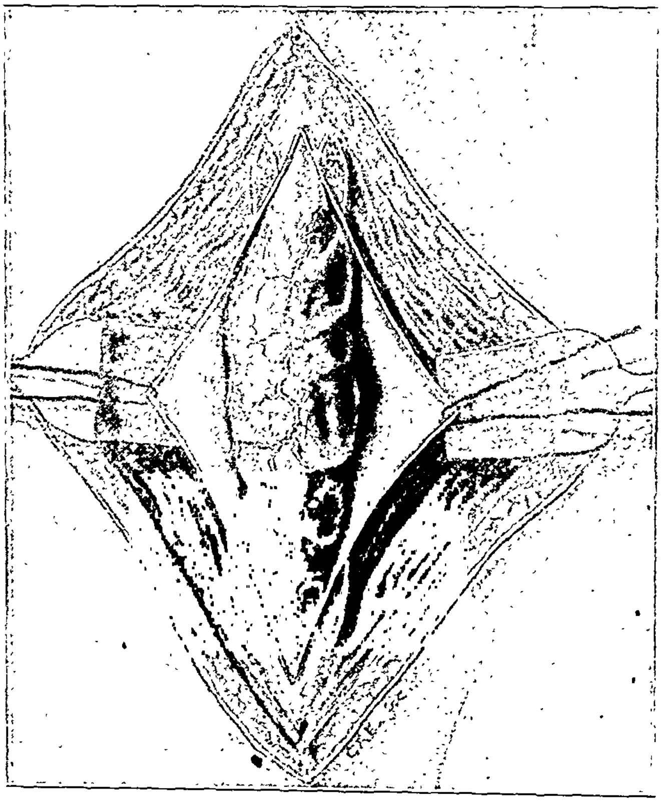

Fig. 1.—Irremovable intramedullary sarcoma of lower cervical and upper dorsal cord (Case 1). The tumor had originated within the cord substance and in its growth had burst through the posterior surface of the cord. It formed a large vascular mass on the *posterior surface* of the cord. Appearance of tumor after incision of the dura. Laminectomy, Nov. 12, 1912.

to the clinic for observation and no change was noticed in her status. She remained this way until the first week of July, 1913, when she began to have some pain in the back and arms which was not continuous and did not interfere with her sleep. July 13 she had walked into the yard and sat in a chair. After sitting awhile she attempted to get up and found that she was unable to move the legs. No subjective symptoms of any sort preceded this. There was no rectal or vesical incontinence. She was returned to the hospital on a stretcher.

Third Admission.—Physical examination now showed that the former spastic paralysis had changed, so that there was a complete flaccid paralysis of the lower extremities; the knee- and ankle-jerks were absent. There was no clonus, Babinski or other plantar response. Muscular power in the arms was unchanged. Sensory examinations showed complete anesthesia to all forms of sensation of the trunk and legs from the level of the second dorsal segment down. Above this was an indefinite band of hypesthesia. There was hyperesthesia on the inner side of the arm in the distribution of the eighth cervical and first dorsal segments.

The third operation was now done. Following it the patient lost bladder control for about three weeks. After one month she could raise the right thigh about 15 degrees. Besides this there was no change in her motor status from the last examination. Sensations showed no change, except that there was possibly some return of pain sensation over both feet, fifth lumbar and first sacral nerves. She was discharged at the end of August, 1913, unimproved, and has not been seen since.

Another way in which tumors of the spinal cord may ape recognition by reason of irregularities in the nifestation of pain is that while the tumor is not entirely painless, the intervals between attacks of pain are so protracted that, when the patient comes under observation, he has either forgotten them or minimizes them to such an extent that the examiner is unable to convince himself whether pain has ever been present in a degree to indicate pressure on the posterior roots. It is, perhaps, not sufficiently recognized that in certain tumors of the spinal cord, extremely painful at some periods, long intermissions occur during which the patient may pass months of comparative comfort without any pain, and that during these periods also there may or may not be an improvement in other symptoms. In one case, reported elsewhere,[4] a patient during an interval of pain recovered sufficiently to go to Europe and thought she was cured. The following is another illustration of this:

Case 2.—Intramedullary lesion in cervical cord. Eight years' duration. Pain intermittent and varying in location. Operation. Death.

History.—G. L., a blacksmith, aged 47, entered the third division of the Neurological Institute, Dec. 26, 1912, with paralysis of both arms and both legs. With the exception of rheumatism, there was nothing in his history to throw light on the present trouble, which had begun eight or nine years before. Stiffness of the right shoulder and numbness in the right hand had been the initial symptoms, followed by a weakness of the upper extremities, especially on the right side. The paralysis began in the upper arms, so that for a time the patient could make use of his forearms and hands by resting the elbows on the table. At this time there was a dull-aching pain between the shoulders, severe enough at times to keep him awake at night. This pain became more persistent, until one year after the onset he was much disturbed at night by cramp-like but non-radiating pains, so that his wife would iron his neck with a hot flatiron. These pains lessened as the years went on and finally disappeared, but were followed by paroxysms of severe pain and cramps in the lower extremities, which started in the hips and radiated down the legs to the knees and feet. The initial weakness in the arms was followed by weakness in the legs, so that the patient had difficulty in walking, the legs feeling heavy and difficult to lift. All the motor symptoms progressed gradually, and at the end of five years the patient was paralyzed in all four extremities, having no use of their muscles except for slight movement in the left arm. He presented a picture, then, of painless spastic paraplegia and was shown before a clinic for three consecutive years as a case of multiple sclerosis.

Examination.—This showed a large, well-developed man with the muscles of all the extremities in a state of tonic spasm, so that he lay in bed, stiff as a board, with arms and legs extended and fingers flexed, and with the feet in a position of plantar flexion. There was no spasm of the muscles of the neck, which was flexible, with some tenderness to pressure over the sixth cervical vertebra as well as over the first and second dorsal vertebrae. There remained a slight power of flexion and extension in the left arm at the elbow, and the power in both trapezii was good. There was everywhere in the paralyzed muscles an increased myotatic irritability. There was no atrophy. Anesthesia to light touch existed from the distribution of the second dorsal segment down. Cranial nerves were normal. Pain and temperature sense were lost in some degree over the same area except in the left leg, in which there was some sensation over the anterior surface and over the foot in the distribution of the fifth lumbar root. The Wassermann test in blood and spinal fluid was negative. The cerebrospinal fluid showed seven lymphocytes per cubic millimeter. Globulin was in marked excess. There was a slight incontinence of urine. There were no bed-sores.

The painful features of his illness were far from characteristic, and while with us the patient suffered no pain. In spite of that and of the long history, a diagnosis of tumor of the spinal cord was made and he was operated on twice by Dr. Alfred S. Taylor. The first operation, Jan. 1, 1913, showed a swelling on the right half of the cord, underlying the fifth and sixth cervical laminae. The lower end of this swelling was rounded and distinct to light touch, while the upper end rather faded away. This swelling was in the cord itself. The right posterior column was split longitudinally over the lower end of the swelling and left for the second operation, which was done Jan. 10, 1913. A thick gelatinous clot was found in the depth of the wound over the cord, which now had a normal appearance. What had been taken for an intramedullary growth had disappeared, possibly by extrusion. The patient survived this operation only a few days. No necropsy was permitted.

It may perhaps be an exaggeration to say that any malady which leads to such disastrous results as do tumors of the spinal cord, and in which neglect to operate is fatal, can run a course which is painless. Any disabling disease must be painful in a way. But there seem to be many cases of spinal tumor in which the pain is no more severe than it is in many other degenerative conditions, and, consequently, is of too elusive and indefinite a character to permit one to decide whether the case is one of tumor or some degenerative spinal cord disease, which is, by its very nature, not operable. Such degenerative conditions as progressive muscular atrophy, multiple sclerosis and paramyoclonus multiplex, are associated with pain in the affected muscles and limbs, feelings of discomfort, feelings of heaviness and feelings of burning; and in the following case the pain complained of was much less than may be observed in any of the conditions just mentioned:

Case 3.—Extramedullary psammosarcoma of upper dorsal cord of six years' duration. No characteristic pains. Laminectomy, with removal of tumor. Perfect surgical recovery. Symptomatic improvement slight.

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[4] Bailey, Pearce: The Surgical Diagnosis and Treatment of Tumors in and about the Spinal Cord, The Journal A. M. A., March 12, 1910, p. 849, Case 2.

History.—Mrs. H., aged 28, entered the third division of the Neurological Institute, Oct. 16, 1913. She was unable to stand or walk, and had incontinence of urine. Nothing in her antecedents could be found to explain this condition. She was married in 1905, and never had children but had one miscarriage. The monthly periods were irregular but not painful. In the spring of 1907 she began to have trouble with her legs. She felt a stiffening and drawing sensation in the knees when she stood or began to walk. This was temporary and would pass off as soon as she took a few steps. A little later she felt a dull pain on the outside of the right thigh, which would come and go; she was treated for rheumatism. In the summer of that year she felt as though she could not lift her feet, and this condition gradually progressed, so that by the end of November, 1907, she began to use a wheel-chair and has never walked since. About three years ago she began to have urgency and incontinence of urine. At no time was the pain severe and it only lasted a few months. It was more a dull ache than a pain. She complains of no pain now, has lost no weight and is otherwise healthy.

Examination.—This showed a woman with a paralysis of the legs, both of which were shrunken and could not be moved by the patient. The knee-jerks were exaggerated, especially the right, and there was a slight patellar clonus. The abdominal reflexes were sluggish. There was no involvement of the arms or the cranial nerves. The back was freely flexible, without tender points. There was anesthesia in the distribution of the sixth dorsal segment. No pain was present. A Wassermann test of the blood and cerebrospinal fluid was negative. Globulin was increased. There were no cells.

In spite of the absence of pain, laminectomy was done by Dr. Elsberg, Oct. 25, 1913. Beneath the laminae of the first, second, and third dorsal vertebrae was found a light reddish tumor 2 inches long and ¾ inch thick. The tumor was extramedullary on the posterior surface of the cord, and attached firmly to the dura at the level of the second dorsal lamina (Fig. 2). The tumor was easily removed and proved to be a psammosarcoma. The cord was much flattened and as thin as tissue-paper and showed a deep depression where the growth had been. The patient recovered well from the operation and improved slightly from the anesthetic symptoms. Otherwise her condition was unchanged and she left the hospital Feb. 1, 1914.

Sometimes the pains of spinal cord tumors are masked, in that they are referred to other regions of the body which are also the seat of disease, and consequently the pain, which in reality comes from the spine itself, is believed to be due to the disease of some vegetative viscus. For example, Krauss[5] reports the case of a man ill of tuberculosis with involvement of the left lung. There were very severe pains referred to the left lung and, in spite of the fact that paraplegia was also present, it was not recognized that the lesion which caused the paraplegia was the same one which caused the pain in the lung, and which proved at necropsy to be a tumor of the dorsal region of the spinal cord.

A woman is at present under my care who three years ago had a number of abdominal operations for ectopic pregnancy. These operations, according to her story, were followed by adhesions, and a subsequent operation was undertaken for these. At the same time symptoms of colitis developed, with burning pains starting from the back and going down and across the abdomen. These pains have gradually become less and the symptoms of the colitis have disappeared, but in the past six months the patient has developed a pronounced spastic paraplegia with slight loss of sensation, but with pains no longer a conspicuous feature. After several painstaking interviews with her, I am still in the dark as to whether or not the pains complained of were directly from the spinal cord.

In the following case, the pains, which were extremely slight and inconspicuous, were for a long time referred to a floating kidney, a condition which existed and which undoubtedly, prior to coming under our observation, had been held as the cause of the pains:

Case 4.—Intramedullary perithelioma of middorsal cord, of nine months' duration. No characteristic pains. Laminectomy, with partial removal of tumor. Death nine months after first operation.

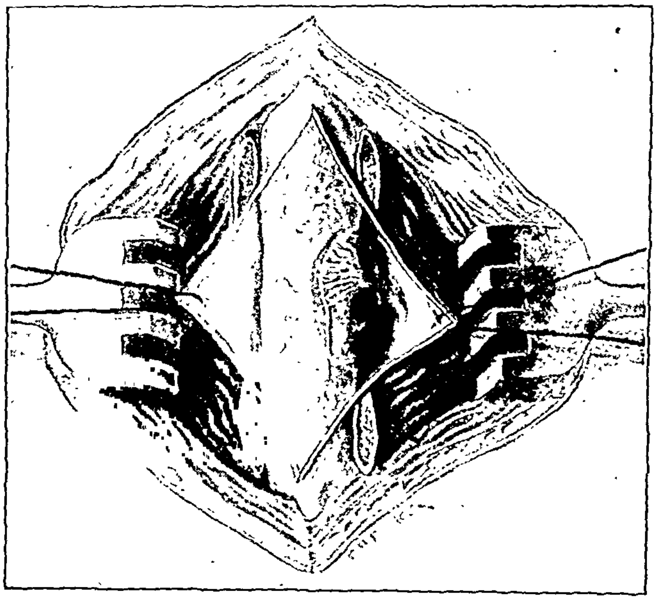

Fig. 2.—Extramedullary tumor of upper dorsal cord, six years' duration (Case 3). Laminectomy and removal, October, 1913. Appearance of tumor after the dura was incised.

History.—Miss A. H., a housemaid, aged 34, was admitted to the third division of the Neurological Institute, Oct. 5, 1910. Her chief complaint at that time was heaviness of the legs and thighs, with numbness and burning sensations. She gave the following history. About Christmas, 1909, she had the measles. Shortly afterward, in January, 1910, she was seized with a sudden sharp pain in the right abdominal region. This gave her a feeling of faintness, but there was no nausea or vomiting and the pain was relieved by the wearing of a tight corset. It continued until May or June, after which time it was not severe enough to be complained of. Physicians told the patient that she had a floating kidney, a diagnosis which was substantiated by us; but no operation for this was ever done. In February, 1910, she noticed a prickling, burning, numb sensation in the toes of the right foot. This gradually extended to the thigh and leg on the left side. At the same time there were disturbances in gait. She felt as though she walked on rough boards, and there seemed to be a ball in the center of the foot. This did not prevent her from walking and she could walk several miles without difficulty and without uncertainty in the gait or twitching, or jerking of the muscles. In March, 1910, she began to have intestinal trouble so that the ordinary stools were mixed with a thick, mucilaginous substance. She had cramps during this time, but the abdominal pains subsided in May. During June, 1910, the prickling sensations continued and the difficulty in walking increased so that she had to use a cane, and she became exhausted after she had walked ten blocks or so. Once, when trying to dodge an automobile, her knees gave out and she fell in the road. She was frightened, and for a time could hardly walk. About the middle of September, 1910, she had to take hold of things when she walked, and her legs felt so heavy that she had to make an effort to move them along. All during this summer there was a tight feeling about the abdomen a little above the hips. She walked in the hospital, but complained of heaviness of the legs and thighs, numbness, prickling and burning sensations. Although there was no actual pain on the left side of the thigh, there was a ridge that felt like a cut. During the first few days in the hospital she became very much worse, so that she was unable to stand alone, and when she attempted it her knees gave way and she fell to the floor.

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[5] Krauss: Jour. Nerv. and Ment. Dis., April, 1910.

Examination.—This showed a well-nourished woman with a paraplegia of the spastic type. She was unable to stand alone, and as she lay in bed there was twitching in groups of muscles in both sides and sudden involuntary flexion of each thigh at intervals, with inability to extend the thighs voluntarily. She complained of continuous pain on the outer side of the left thigh. There was no retention or incontinence of urine, but she complained of a feeling of urgency. There were no tender points over the spine and no deformity. The motor symptoms were more marked on the right side. On this side there was a slight foot-clonus, and the right patellar reflex was more marked than the left, although both were exaggerated. When she was supported her gait was spastic, although she could neither walk nor stand alone. She localized the girdle sensation pretty accurately at the dorsal level. The abdominal reflexes were absent. To light touch there was pronounced anesthesia, at the level of the tenth and eleventh dorsal segments, extending a little lower on the right side. Below this there was hyperesthesia, more marked on the right side. Also, above the band of anesthesia was a small band of hyperesthesia. The pain and temperature sensations were practically the same as the touch, except that temperature sensations appeared to be more affected than those of pain. A Wassermann test of blood and cerebrospinal fluid was negative. The cerebrospinal fluid showed no increase in pressure, and 13 lymphocytes per cubic millimeter. There was marked increase in globulin.

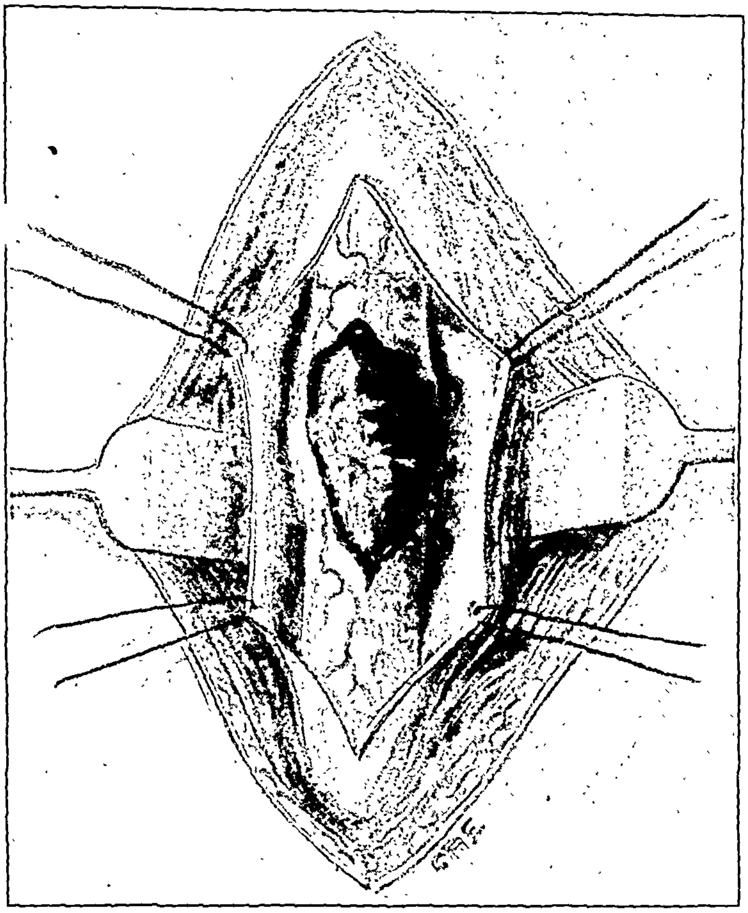

Fig. 3.—Intramedullary tumor of middorsal cord (Case 4). After incision of the cord in the posterior median septum, the hemorrhagic growth was partly extruded from the cord substance. Appearance of tumor at the second operation, Oct. 27, 1910.

This case proved to be an intramedullary tumor (perithelioma), and the operative procedures by Drs. Elsberg and Beer were carried out in three stages.

Operations.—The first operation, Oct. 19, 1910, showed a tumefaction of the cord under the laminae of the sixth, seventh and eighth dorsal vertebrae. This was incised in the median line, and a dark mass about the size of an olive began slowly to extrude.

At the second operation, Oct. 27, 1910, some of this mass was removed (Fig. 3). At the third operation, March 10, 1910, most of the growth was removed. It was 2½ inches long and from ½ to ⅔ inch wide, was green and very friable. The day after the first operation there was an improvement in motor power, which continued, and the patient said that the subjective sensations were less.

After the second operation, the return of power in the legs was rapid and marked, so that by January, 1911, the patient could stand and support her weight, and in February began to walk again, with slight assistance. In the latter part of February, however, the patient began to lose ground again and soon became paraplegic, with incontinence of the bladder and rectum, symptoms which had not appeared before. Sharp pains developed now which, beginning in the lower dorsal spine, radiated down the legs. They were increased by movement.

The sensory changes which followed the operation, although very intricate and interesting, will only be indicated here. After the first operation the patient had anesthesia in the area of the tenth dorsal segment. After the second operation there was a return of touch sensation on the left side up to the eleventh dorsal segment. Temperature and pain sensation anesthesia remained unchanged. On the right side there was some return of all three forms of sensation, but not so marked as on the left. A little later, the anesthesia assumed the Brown-Séquard type, so that there was a marked loss of touch on the right side with marked loss of temperature on the left, the upper level of all remaining the same. Just before the third operation there was a deepening of the loss of sensibility to pain and temperature, while the loss of sensibility to touch remained about the same. The Brown-Séquard dissociation persisted.

Shortly after the third operation there was complete anesthesia for all sensations from the ninth dorsal segment down. There was considerable shock after the third operation, without functional motor improvement. Patient left the hospital in April, 1911, being bedridden at that time, and during the summer she died. No necropsy was made.

I take it that the relationship between trauma and spinal cord tumor is now well established. There are a great many instances in which injury to the back, in a previously healthy person, has been followed in the course of a few months by characteristic appearances of spinal cord tumor, and in many of these cases operation has been done. The occurrence of pain in such cases is interesting, for at the time of the injury to the back there is immediate pain at the point of injury, and this pain does not entirely disappear, but remains until finally it develops into the pain of a spinal cord tumor.

In a case of endothelioma of perithelial type, reported by Schlapp and Bovaird,[6] a young man injured in a football scrimmage felt intense pain between the shoulder-blades. The spontaneous pain lasted a week. Eleven months later, without the addition of shooting pains, there was pain on pressure at the point of injury and also pain referred to the same

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[6] Schlapp and Bovaird: Jour. Nerv. and Ment. Dis., 1911, xxxviii, 221.

place when the patient jumped or leaned over. The tumor, which was removed by operation, surrounded the cord from the seventh cervical to the third dorsal segment.

In a discussion of the general subject of pain in spinal cord tumors, it must not be forgotten that pains identical with those of irritation of the posterior roots by compression may occur in other conditions. Dr. Elsberg and I[7] have reported such a case, in which no positive diagnosis was ever made, but which was relieved by operation; and in several cases I have seen neuralgias following as a result of the withdrawal of morphin in morphin addiction, identical in symptoms with pains of spinal cord tumors.

It used to be believed that absence of pain was a definite indication that if a tumor existed it was intramedullary. This is now proved to be an error, as a great many cases of intramedullary tumor are on record in which pain has been a prominent feature; and, on the other hand, in many of the painless tumors (as in some reported here) the growth was extramedullary. Presence or absence of pain, therefore, is not to be relied on to prove that the condition is intramedullary or extramedullary, any more than it is a means of localizing the growth with respect to the circumference of the cord. We shall have to take the same position in regard to spinal cord tumors as we have taken for years in regard to tabes, that is, that pains may be absent in a disease which is usually highly painful; and that the absence of it in any case presenting other sufficient symptoms does not vitiate the diagnosis. Acceptance of this view is extremely important for the successful handling of these cases, for if we are to be held back from laminectomy by the single reason that pain is absent, we shall either lose the chance altogether of curing many patients, or shall defer the operation so long, as happened in two of the cases mentioned here, that when it finally is done the injury to the cord is past remedy and the operation serves no purpose other than a demonstrative one. The operation is not hazardous in itself.

Out of twenty-four laminectomies performed in the Neurological Institute during the year ended Nov. 30, 1913, there was only one death, and this patient died after a second-stage laminectomy for a suspected tumor of the cervical cord, a highly precarious region. Considering this slight mortality, I feel little hesitation in recommending exploratory laminectomies by skilful operators in cases in which spinal cord tumor may exist, especially in view of the fact, now established, that painlessness does not deny such existence.

My thanks are due to Dr. C. A. Elsberg for the drawings and to Dr. Elsberg and Dr. A. S. Taylor for description of the operative procedures.

52 West Fifty-Third Street.

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[7] Bailey, Pearce, and Elsberg, Charles A.: Spinal Decompression, The Journal A. M. A., March, 9, 1912, p. 675.

The Value of Antityphoid Vaccination.—Since the very great and almost absolute protective value of antityphoid vaccination has been proved, the fact should be promptly accepted by the medical profession, who should encourage its acceptance by the public by example, but, especially, by expression of absolute confidence. A doctor should no more question the value of antityphoid vaccination than he should question vaccination against small-pox or mosquito transmission of yellow fever or malaria.—C. C. Bass, M.D., in *Am. Jour. Trop. Dis. and Prev. Med.*

GASTRO-INTESTINAL STUDIES

I. THE QUESTION OF THE RESIDUUM FOUND IN THE EMPTY STOMACH *

MARTIN E. REHFUSS, M.D., OLAF BERGEIM, Ph.D.
AND
PHILIP B. HAWK, Ph.D.
PHILADELPHIA

The routine examination of material from the empty stomach in the morning discloses a small pale yellowish or greenish residue, somewhat cloudy, containing mucus and a little cell débris. We are told by Loeper,[1] Zweig,[2] Kemp,[3] Wolff,[4] Strauss,[5] Riegel[5] and Soupalt[5] that in health this residue should not exceed 20 c.c., and that there should be no macroscopic food-residues. It is true that occasionally the microscope discloses fat-globules, cells with their protoplasm digested and their nuclei set free, and rarely vegetable-fibers or meat-fibers, but no macroscopic residue is forthcoming.

This is the common finding with the stomach-tube, and the results recorded have gone unquestioned. Only recently Harmer and Dodd,[6] by careful Roentgen studies, pointed out that we are by no means sure that the stomach-tube reaches the lowest point of the stomach. In other words, they showed that the stomach-tube, even when it was passed through a glass tube of the size and caliber of the esophagus, has a tendency to deviate on emergence, striking the gastric mucous membrane. It then curls up so that not all the material in the stomach can be aspirated. They pointed out that the results obtained by the stomach-tube were by no means conclusive, and that gastric stasis was frequently overlooked.

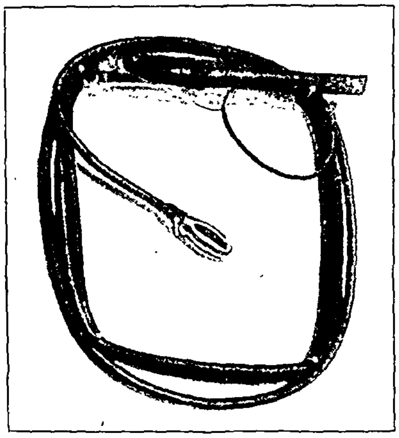

Fig. 1.—Modified gastric tube.

We have been able to corroborate the statements of Harmer and Dodd in an entirely different way, incidentally throwing light on the so-called physiologic residue. One of us[7] devised a modified stomach-tube (Fig. 1) on the principle of the duodenal tube, supplying it with a special tip, which by its weight would seek the most dependent part of the stomach. The tip is slotted with large perforations, the diameter of each being equivalent to the maximum bore of the tubing (No. 8 French). This tube can be left in the stomach through the entire cycle of gastric digestion. It was in studying the normal digestion in healthy symptomless

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* From the Laboratory of Physiological Chemistry of the Jefferson Medical College.

[1] Loeper: Leçons de pathologie digestive, Series 2, 1912, p. 17.

[2] Zweig: Magen und Darmkrankheiten, 1912, p. 459.

[3] Kemp: Diseases of the Stomach, Intestines and Pancreas, 1912, p. 133.

[4] Wolff: Taschenbuch der Magen und Darmkrankheiten, p. 22.

[5] Cited by Loeper.

[6] Harmer, T. W., and Dodd, W. J.: Sources of Error in the Use of the Stomach-Tube for Diagnosis, Arch. Int. Med., November, 1913, p. 488.

[7] Rehfuss: Am. Jour. Med. Sc., June, 1914.

medical students that we were able to determine the normal residue. One of us was surprised to note discrepancies between the amount of material aspirated with the stomach-tube and the amount of material obtained with the new tube. In two instances in which the passage of the old tube failed to disclose any residue, the passage of the latter enabled us to obtain a little over 20 c.c. in one case and over 100 c.c. in the other case. The principle is therefore entirely different. The old tube is propelled from above and its position is always fixed, while the principle of the new tube is always that of gravity. The technic is described elsewhere. Suffice it to say that we aspirate while the subject is on his back, on his stomach and on each side and is breathing deeply. In this way we obtained the accompanying figures from healthy symptomless medical students, and a glance at Figure 2 will show the residuum in a straight series of nine students, the material being placed in 150 c.c. flasks.

SERIES DETERMINATION OF THE RESIDUUM OF THE EMPTY STOMACH

Case	Total Acidity	Free Acidity	Mette	Quantity, c.c.	Food Residues
48	26.0	19.5	...	57	0
50	43.5	36.0	2.5	76	0 bile
51	51.5	41.5	2.5	180	0 bile
52	35.5	21.5	2.8	97	0 bile
	42.5	32.0	3.0	42	0 bile
	61.5	49.0	3.2	61	0 bile
	49.0	41.0	3.5	120	0 bile
	41.0	39.0	2.6	60	0 bile
	5.0	2.5	0.0	32	0 bile
62	53.0	37.5	3.5	65	0 green
63	40.5	38.0	1.5	60	0 none
64	6.5	4.0	1.0	35	0 saliva
65	6.0	0.0	1.1	30	0 saliva

None of this series was suffering in any way from gastro-intestinal disturbances, and yet we were able to obtain in every instance more than 20 c.c. of residuum and in some cases more than 100 c.c. No macroscopic food-rests were found in any of these samples, and although microscopically fat and occasionally a few vegetable fibers were found (very rarely), meat fibers were never found. In every instance the subject was examined at 8 o'clock in the morning. More than half the number contained bile, and with the exception of the last two only the slightest traces of saliva were found. It will be noted that most of the samples contained a rather high acid content and strong enzyme activity.

These results are of the greatest importance. The fact that in a straight series of healthy medical students (and care was taken to select only those who came up to this standard), we should find none from whom we could not obtain more than 20 c.c. of residuum, leads us to modify seriously our conception of the diagnostic value of the quantity of residuum.

EXPLANATION ON THE BASIS OF THE STUDIES PERFORMED BY THIS TUBE

On the same students and others we made a study of normal digestion. Briefly stated, we found that there was no single curve which could be construed as normal. We found that each individual exhibits a certain tendency in the elaboration of his secretion, and this tendency is the same, be the stimulus an Ewald meal, water or meat. In fact, we obtained exactly the same character of curve with water as with an Ewald meal, and the figures for all practical purposes were just as high. This suggested to us the fact that this substance in itself was the simplest and possibly the best test-meal. That phase of the subject will be more fully discussed in a contribution regarding the action of water in human gastric digestion.

Our normal responses fell into three types:

In the first type, which we call the "isosecretory" type, the curve rose gradually, reached a maximum, the limits of which were from 50 to 60 in terms of tenth-normal sodium hydroxid, and then gradually fell. An Ewald meal was digested in two and one-half hours.

The second type showed a rapid rise, a sustained high point and little tendency to drop even after the food had left the stomach in normal time; for some time afterward secretion poured out. This might persist for half an hour, one hour or even in pronounced cases several hours, and is called the "continued" digestive secretion in contradistinction to hypersecretion, because it occurs in almost 40 per cent. of normal symptomless persons. The figures in this type may approach 100 and over.

The "hyposecretory" type is like the first type, but the response is slower, the high point lower and less pronounced, and digestion is usually over in a little more than two hours. It is particularly in the hypersecretory type that the largest residuum is encountered, and it must be evident that a residue of 50 c.c., which is without significance in this type, may be of great importance in the other types.

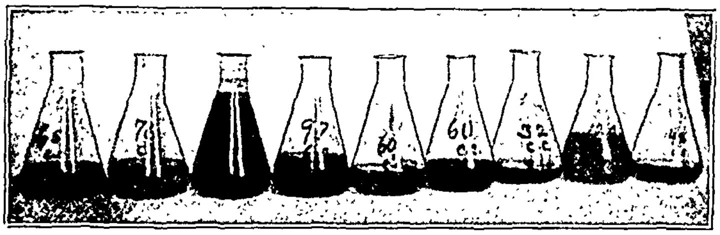

Fig. 2.—Gastric residuum in nine normal students.

WHAT IS THE CAUSE OF THIS RESIDUE?

Sokolow[8] has demonstrated that saliva, bile and pancreatic juice were all capable of calling forth the gastric secretion, but that the former is nearly always expelled at the close of a meal (Gröbbel[9]). If the Roentgen and physiologic findings demonstrate that the pyloric reflex is largely due to the action of acid on the duodenal mucous membrane, it is likely that when this ceases the pyloric mechanism is in a relaxed condition and there is a backflow of juice. We have found that the most common residue and the last to leave the stomach is fat, and this substance, even in small amounts, is capable of inducing a regurgitation of bile and pancreatic juice. Loeper[10] asserts that there is an increased molecular concentration to the residuum and that this favors spasm of the pylorus and retention. While this may be an explanation of certain pathologic residues, it scarcely holds for these findings, inasmuch as there was no pylorospasm, and bile was present in the majority of cases.

Of late, much importance has been attached to the study of the residuum or the *liquide à jeune*, as the French term it. Continental writers and statements in our text-books insist on the fact that it should not exceed 20 c.c. Rosin and Schreiber[5] alone assert that it is important only when it attains 60 c.c. or over.

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[8] Sokolow: Diss., St. Petersburg, 1904 (Babkin: Die Aeussere Sekretion der Verdauungsdrüsen, 1914, p. 150).

[9] Gröbbel: Ztschr. f. physiol. Chem., 1914, lxxxix, 1.

[10] Loeper: Leçons de pathologie digestive, 1912, p. 19.

The general feeling is that anything over 20 c.c. indicates hypersecretion, and this in turn in many cases indicates an organic lesion, nearly always ulcer. Loeper[1] gives a summary of the thesis of Sauphur in which two series, those of Rubow and those of Borjsjarg, are reviewed. The former obtained in 77 cases a residuum varying from 9 to 100 c.c.; 17 times the existence of ulcer was verified, 10 times it was clinically certain, 30 times probable. In the second series 102 patients were examined; 72 presented a distinct residuum with or without free hydrochloric acid; 52 had ulcer; 15 a stenosis, 1 cancer of the liver, another cancer of the stomach, and 2 were tabetic and tuberculous. In 30 the stomach was absolutely empty, and of these one alone had ulcer. Does this mean that ulcer is so frequent that the majority of our subjects were afflicted with that condition? Or does it even mean that some of them were predisposed to ulcer? That is utterly out of the question even though we do believe in the possibility of latent ulcer. The fact that in the second series mentioned above thirty cases showed no residuum with the old tube indicates that the old method was defective inasmuch as we found no case in which examination with the new tube failed to disclose some residuum.

These points are exceedingly important. They simply indicate that we must modify our opinion regarding the quantity of residuum and demonstrate that the old method of examination was inadequate. The fact that 20 c.c. is constantly exceeded in health lends color to the belief that the presence of food-rests is more important than the quantity of residuum. It is not our purpose to detract from the value of hypersecretion in ulcer, but simply to indicate the dangers in drawing conclusions as to the existence or nonexistence of ulcer from this symptom.

CONCLUSIONS

1. The accepted limit of the normal residuum of the empty stomach as 20 c.c. is false.
2. The examination by means of the old stomach-tube as demonstrated by Harmer and Dodd and our own experiments is entirely inadequate.
3. The method of examination by means of the new modified stomach-tube is the only satisfactory method of determining the complete residuum.
4. On a series of healthy medical students the residuum in every instance exceeded the accepted limit and in several instances was above 100 c.c. without there being any evidence of gastro-intestinal or general disorders.
5. The significance of this symptom in relation to the diagnosis of ulcer must be seriously questioned.

We wish to thank the gentlemen who kindly served as subjects in the experiments reported.

Oxypathy.—Who can count the cults? If any one of them could do what they claim to do the human race would be free from disease and the millennium would be with us. The osteopath, the chiropractic, the mechanotherapist, the Christian Scientist and the hundreds of other false believers have all failed in that they have benefited only a few and injured many. The benefit has been chiefly through suggestion and really a false benefit. In other words, they obtain an apparent relief by substituting a cult delusion for a disease delusion.—Editorial, *Old Dominion Jour. Med. and Surg.*, April, 1914.

CHRONIC OCULAR TUBERCULOSIS

NECROPSY FINDINGS IN A CASE IN WHICH DEATH WAS DUE TO TUBERCULOSIS OF THE HYPOPHYSIS CEREBRI *

F. H. VERHOEFF, A.M., M.D.

BOSTON

Ocular tuberculosis may be classified into at least two well-defined types, the acute and chronic. To the acute type belong the cases of solitary tubercle of the eye, diffuse tuberculosis of the choroid, acute tuberculous iritis, etc. These cases run a relatively rapid and malignant course, loss of the eye and often also death of the patient ensuing. Although this type of tuberculosis is rare, the eyes, for obvious reasons, have frequently been examined microscopically. The lesions do not differ from active tuberculous lesions elsewhere in the body, and there is no doubt that they result from direct blood metastases. To this type belongs also miliary tuberculosis of the choroid, which is usually a terminal manifestation of the systemic disease. Intermediate between cases of the acute and chronic type of ocular tuberculosis are certain cases of tuberculous choroiditis which are also probably due to direct blood metastases.

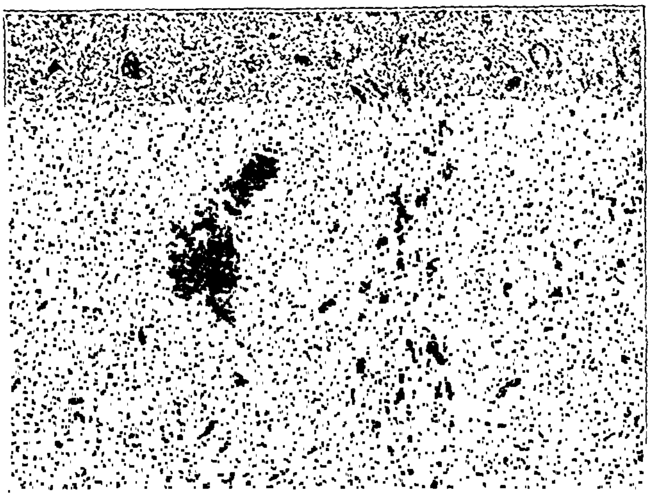

Fig. 1.—Tuberculosis of the hypophysis cerebri, showing giant-cells, caseation and remains of parenchyma of anterior lobe; × 40.

To the chronic type of ocular tuberculosis belong the far more frequent cases of tuberculous scleritis, keratitis, chronic iritis, and cyclitis. These cases run an extremely slow course, are almost never fatal, and healing ultimately occurs, followed frequently by recurrences. Both eyes are most often involved, though not always simultaneously. In 1907 I showed by means of tuberculin tests and microscopic examinations of excised nodules that tuberculous scleritis, the most common manifestation of chronic ocular tuberculosis, is in reality identical with anterior nodular scleritis.[1] This condition had generally been designated simply as scleritis or episcleritis and regarded as rheumatic in nature. More recently, I have brought forward evidence that the lesions of chronic tuberculous scleritis, keratitis, iritis, cyclitis, and sometimes, choroiditis, have the same origin, which, moreover, as will be pointed out, is essentially different from that of acute ocular tuberculosis.[2]

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* From the Massachusetts Charitable Eye and Ear Infirmary.

* Read before the Section on Ophthalmology at the Sixty-Fifth Annual Session of the American Medical Association, Atlantic City, N. J., June, 1914.

[1] Verhoeff, F. H.: Tuberculous Scleritis, a Commonly Unrecognized Form of Tuberculosis, Boston Med. and Surg. Jour., March 14, 1907, p. 317.

There are still other affections of the eye that may be due directly or indirectly to tuberculosis but concerning which our knowledge is yet highly imperfect. Thus, phlyctenulosis is generally believed to be due to sytemic tuberculosis, but on evidence that is not accepted as conclusive. Recurrent hemorrhages of the retina and vitreous, exudative retinitis (Coats), and periphlebitis retinalis adolescentium (Igersheimer) all may prove to be manifestations of tuberculosis. It is noteworthy that these conditions in general occur at an earlier period of life than does chronic ocular tuberculosis.

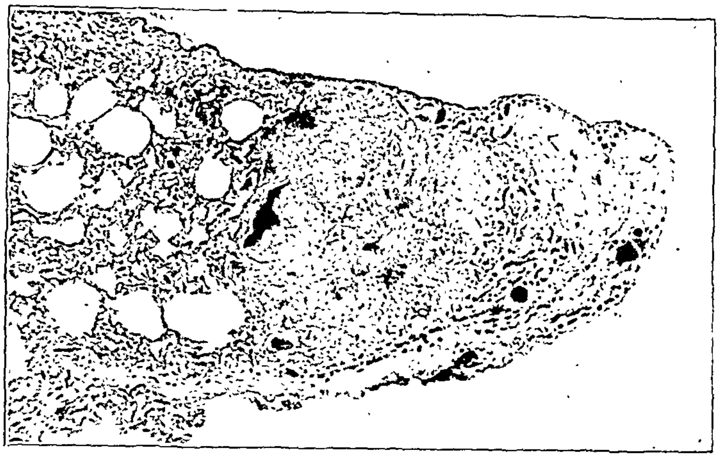

Fig. 2.—Tuberculous focus at base of right lung; × 6.

Microscopic examinations of entire eyes from cases of chronic ocular tuberculosis have been few, while so far as I know a general autopsy in such a case has never been recorded.[3] The case that I have to report is therefore especially noteworthy, since not only were both eyes obtained for examination but a general autopsy was performed. It also seems to be only the third case yet recorded of death due to tuberculosis of the hypophysis cerebri.

REPORT OF CASE

J. M., married woman, aged 36, multipara, was first admitted to the Massachusetts Charitable Eye and Ear Infirmary Jan. 18, 1912, for a tuberculin test. She was readmitted Feb. 24, 1913, and discharged March 8, 1913. April 4, 1913, she was again admitted, at which time she came under my care until her death.

Ocular History and Condition.—The right eye first became affected with keratitis three years before death. This subsided after one year, leaving the vision of the right eye reduced to 20/100; it remained so for one year. The left eye then became similarly affected and soon afterward the right eye again became inflamed, after which neither eye was entirely free from inflammation. Seven weeks before death, visual acuity of the right eye was 3/200, and of the left eye 2/200. At this time the right eye was considerably congested, the cornea was vascularized, generally hazy, and showed scars of old sclerokeratitis above, and two deep interstitial opacities in inner and outer lower quadrants respectively, each about 1.75 mm. in diameter. In addition, near the limbus below there was a large nodule which projected into the anterior chamber. The left eye was almost free from congestion but showed a condition of the cornea similar to that of the right eye, with the exception of the nodule projecting into the anterior chamber. There were no nodules of scleritis visible in either eye. Each eye showed a few small posterior synechiae, but the pupils dilated fairly well under atropin. The anterior chambers were of normal depths, and the tension of each was not elevated. Fundus details could not be made out owing to the corneal opacities. Paracentesis of the cornea was done three times on the right eye, and each time was followed by noticeable clearing of the corneal haze and decrease in the congestion, but the effect was not lasting.

General History and Condition.—The general condition of the patient was good until the year of her death. Tuberculin tests made four months before death (1, 5 and 10 mg. of Old Tuberculin) gave no definite focal or general reactions, the highest temperature reached being 99.4 F. This, however, was about 2 degrees above the usual temperature, which was persistently low, averaging about 97 F. and often falling below 96 F. in the morning. A general physical examination made at the Massachusetts General Hospital, April 8, 1913, showed double mitral disease of the heart, but was otherwise negative. The anterior cervical lymph-glands were slightly enlarged. Eight months before death the menses permanently ceased. The patient had always been mentally bright and cheerful, but during her final stay in the hospital she became markedly dull and apathetic. During this time it was noted that she had polydipsia and marked polyuria, but her appetite was very poor. Examination of the urine was negative for sugar and albumin. The pulse-rate showed extreme variations, at times in the morning falling to 60 and in the evening rising to 120. Toward the end it became more constant, varying between 70 and 80 until a few days before death. The respiration rate varied between 15 and 20. The patient was habitually constipated, but about ten days before death she developed diarrhea and pain in the bowels. This confined her to bed for three days, when she improved sufficiently to walk about. The day before her death, she was attacked by still more severe diarrhea and pain, accompanied by attacks of syncope. Finally she became comatose, and died May 29, 1913. Three days before death her temperature began to rise slightly, reaching 100.5 just before death, with a pulse-rate of 110.

Necropsy.—By Dr. Verhoeff, eight hours after death.—Body that of a fairly well-nourished woman. Peritoneal and pleural cavities free from fluid. Pericardial cavity does not contain an excess of fluid. Lungs: On the right side the pleural cavity is partly obliterated by old adhesions extending from the base of the lower lobe. Along the anterior margin of the base of the right lower lobe immediately beneath the adherent pleura, there are three contiguous nodules each about 8 mm. in diameter, and the lung margin is here more or less thickened for a distance of 5 cm. This is evidently a tuberculous process. On section, no other evidences of tuberculosis, either old or recent, can be made out after the most careful examination. The apices are emphysematous

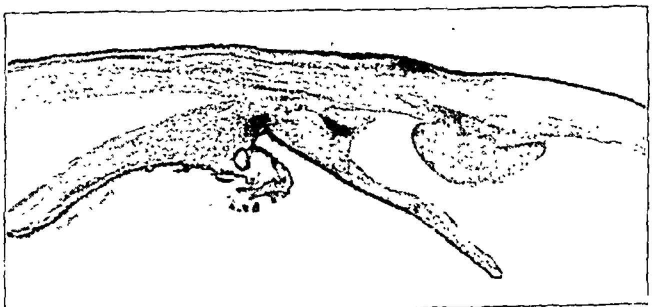

Fig. 3.—Tuberculous scleritis; tubercle in filtration angle, and large tubercle of unusual character on posterior surface of cornea; × 10.

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[2] Verhoeff, F. H.: The Histologic Findings in a Case of Tuberculous Cyclitis, and a Theory as to the Origin of Tuberculous Scleritis and Keratitis, Tr. Am. Ophth. Soc., 1910, p. 566; The Experimental Production of Sclerokeratitis and Chronic Intra-Ocular Tuberculosis, Arch. Ophth., 1913, xlii, 471.

[3] Hayashi (Ueber einen bemerkenswerten Fall von Tuberkulose des Auges mit Sektions-Befund, Klin. Monatsbl. f. Augenh., 1911, xlix, 274) reported a case that on clinical grounds he regarded as probably tuberculous, in which a general autopsy was performed. Inasmuch, however, as the microscopic examination of the eyes gave no evidences of tuberculosis, and no tuberculous lesions were found elsewhere, this case certainly cannot be accepted as one of tuberculosis.

only. There is marked anthracosis. The bronchial glands are pigmented and slightly enlarged, but are not caseous on section. Heart: Weight, 220 gm. Thickness of wall of left ventricle, 14 mm.; of right, 6 mm. Ventricles not abnormally dilated. The tricuspid and mitral valves are thickened and show a few old vegetations. The aortic valves are also slightly thickened. The pulmonary valves are normal. The foramen ovale is not patent. The aorta and coronary arteries are normal.

The spleen, kidneys, liver, bladder, stomach, uterus, fallopian tubes, and ovaries are normal. The mesenteric glands are in general very slightly enlarged, the largest being 1 cm. in diameter, and those beneath the diaphragm are pigmented. The solitary lymph-nodes and Peyer's patches of the intestines are abnormally large for an adult, the individual nodes measuring from 0.5 mm. to 2 mm. in size, and are unusually numerous. Otherwise the intestines are normal.

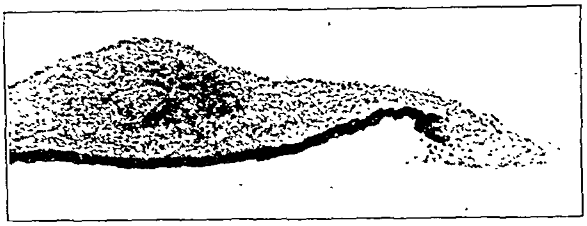

Fig. 4.—Tuberculous synechia at pupillary margin of iris; lymphoid nodule in iris stroma; × 30.

Head: The meninges are normal. The hypophysis cerebri is enlarged to about ten times the volume of a normal hypophysis, measuring 21 mm. by 18 mm. by 15 mm. It is firmly united with the chiasm which it has carried backward. The brain on section is normal. The ventricles and choroid plexus, examined with special care, are free from tubercles.

Histologic Examination.—The liver, spleen, and ovaries are normal. The kidneys show slight subacute glomerulonephritis (?). The intestines show moderate hyperplasia of the lymph follicles. The bronchial lymph-glands show the usual reaction to carbon pigment, but are not tuberculous. The mesenteric lymph-glands also show no evidences of tuberculosis.

Lung: The process at the base of the right lung shows the typical picture of tuberculosis, with foci of epithelioid and giant cells, a considerable amount of fibrin, and small areas of caseation (Fig. 2). There is notably slight lymphoid cell infiltration, and the areas of caseation are not infiltrated with pus-cells. Some of the individual tubercles consist of discrete endothelial cells situated within distended alveoli. Most of them, however, show a syncytial structure and are undergoing fibrosis. The conglomerate tubercle as a whole contains a large amount of fibrous tissue. About 16 mm. from the main process, and 3 mm. beneath the pleura, there are three minute tubercles that appear to be of relatively recent origin. The pleura over the tuberculous process and in the vicinity of the latter is not itself tuberculous, but consists of a thick layer of fibrous tissue containing in places large masses of adipose tissue. The lung tissue beneath the thickened pleura shows, in addition to the tuberculous process, the usual changes associated with anthracosis, and is emphysematous.

The hypophysis cerebri has been converted into a large tubercle of the fibroid type with a central caseous center about 5 mm. in diameter. Not a single area of non-tuberculous hypophyseal tissue can be found anywhere, but remains of the acini of the anterior lobe are scattered here and there (Fig. 1). Small discrete tubercles are numerous. These always consist of a syncytium of endothelial cells often containing Langhans' giant-cells, and many of them show caseation. The large central area of caseation and the smaller areas as well are free from purulent infiltration but contain an abundance of reticulated fibrin. Lymphoid cell infiltration in general is slight, but in places is fairly marked. From the hypophysis the tuberculous process has slightly invaded the chiasm. The latter also shows interstitial infiltration with lymphoid cells and an occasional deeply seated tubercle. The infundibulum is normal except at its junction with the hypophysis, where it shows an inflammatory reaction.

PATHOLOGIC EXAMINATION OF THE EYES

Both eyes were removed at autopsy and opened by equatorial section. The right eye was fixed in 10 per cent. liquor formaldehydi, but before it was placed in this solution a piece of the ciliary body, as described below, was removed for animal inoculation. The left eye was fixed in Zenker's fluid.

Right Eye.—The globe is normal in size and shape. The cornea shows the scars already noted clinically. The nodule projecting into the anterior chamber from the cornea is ovoid in shape, situated parallel to, and 1.5 mm. from the canal of Schlemm, and measures 1 mm. by 1.5 mm. by 4 mm. in size. The anterior chamber is free from coagulum. The lens is *in situ* and clear. There is complete peripheral anterior synechia. The pupil, 4 mm. in diameter, shows six delicate posterior synechiae. The vitreous humor is of normal consistence, and clear in its posterior portion. In its anterior portion it shows a number of dots scattered within it. The largest of these, about 1 mm. in diameter, are twelve in number. The ciliary body shows four white spots irregular in shape, situated just behind the ciliary processes. Three of these are below, 2 mm. apart, the largest being 2 mm. in diameter. The other 0.75 mm. in diameter, is on the nasal side. The choroid and retina are *in situ* and normal. The optic disk is not cupped.

Histologic Examination of Right Eye.—For a distance of about 3 mm. from the limbus above, the cornea has been converted into vascularized scar tissue, but it here contains no definite tuberculous foci. The central portion of the cornea is relatively normal, but shows occasional vessels in its posterior layers. Near the center, an old non-vascular scar is found just beneath Bowman's membrane. The epithelium is everywhere intact. Bowman's membrane is also intact except over the scar near the limbus above, where it has been destroyed in places. Descemet's membrane and the endothelium are normal except at the site of the nodule below. This nodule (Fig. 3) is found to be a large tubercle that has involved the posterior layers of the cornea only to a depth of five or six lamellae. Some sections show curled fragments of Descemet's membrane carried into the cornea by the tubercle. The structure of the tubercle is unusual. Within the cornea and at its base it is composed of epithelioid and giant-cells as is usual, but its greatest mass, lying within the anterior chamber, is composed largely of fibrin. The fibrin is covered with a thick layer of fibroblasts, and the latter are also invading it from the base. It is thus evident that the large size and unusual structure of the tubercle is due to the deposition of fibrin on a tuberculous focus primarily involving the inner surface of the cornea. Whether this focus originated inside or outside of Descemet's membrane it is now impossible to determine.

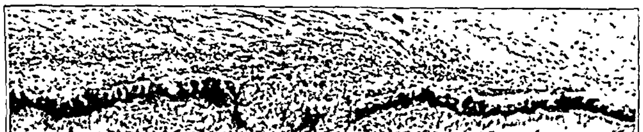

Fig. 5.—Tuberculous focus involving surface of ciliary body. The epithelium has been broken through. Macroscopically this appeared as a white spot about 1.5 mm. in diameter; × 50.

Filtration Angle: This is blocked by the root of the iris all around, and almost every section shows it to contain one or more small tuberculous foci, most of which are in various stages of fibrosis (Fig. 3). Sometimes a focus is seen extending into the cornea beneath Descemet's membrane.

Sclera: In the vicinity of the limbus above, the sclera is abnormally vascularized and largely replaced by fibrous tissue continuous with that of the cornea (old sclerokeratitis). In addition, it shows marked perivascular infiltration with lymphoid cells and a number of small stretched out areas of epithelioid cells, usually in the middle layers. Below, the sclera is less cicatrized, and here also shows tuberculous foci (Fig. 3). These are more active or recent than those above, and one of them, composed largely of discrete endothelial cells, is almost in contact with the conjunctival epithelium.

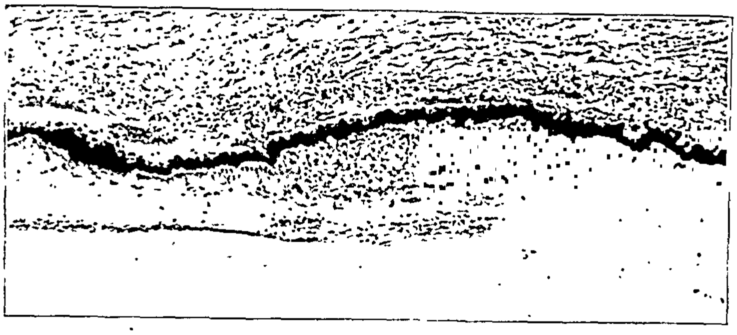

Fig. 6.—Tuberculous focus involving only the epithelium of the ciliary body. A giant-cell is present; × 50.

Iris: The iris shows diffuse infiltration with chronic inflammatory cells, chiefly lymphocytes, and also numerous sharply defined lymphocytic nodules. The latter contain no germinal centers as do true lymph follicles. Attached to the pupillary margin in places there are minute wedge-shaped foci of epithelial cells—tuberculous posterior synechiae (Fig. 4).

Ciliary Body: In general, the ciliary body is almost normal. It shows only slight lymphocytic infiltration, but is giving off a considerable number of lymphocytes from its surface. In places there is slight proliferation of the pars plana ciliaris retinae. The white spots on the pars plana are found to be localized tuberculous foci involving chiefly the surface (Figs. 5 and 6). They consist of delicate avascular hyaline tissue in which more or less circumscribed areas of epithelioid cells occur. Each is intimately connected with the epithelium, which is greatly altered beneath it. In some places the epithelium is almost completely destroyed by foci of epithelioid cells which have penetrated it and slightly involved the underlying stroma. In other places its two layers are split apart. In the upper part of the eye a small tuberculous focus is found beneath the intact epithelium over which there is no tuberculous process. This focus also differs from the others in the fact that it is surrounded by a marked lymphocytic infiltration.

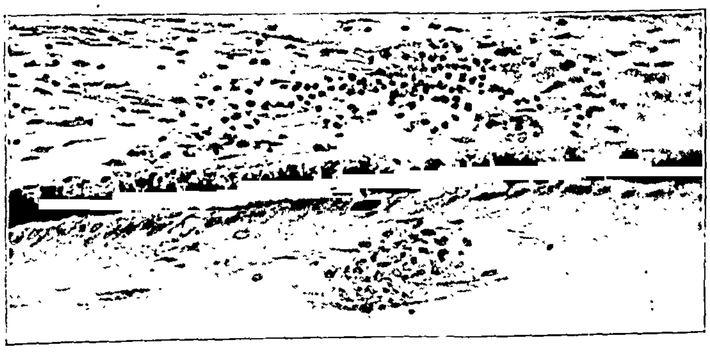

Fig. 7.—Minute tubercle composed of endothelial cells, on surface of ciliary body; × 195.

Vitreous Humor: The white dots are found to be tubercles, free from caseation, composed of epithelioid cells (Fig. 8).

Choroid: This is normal.

Retina: So far as can be determined the retina is normal. The ganglion cells are present in normal numbers but show post-mortem changes.

Optic Nerve: The optic disk is not definitely cupped, but the lamina cribrosa is curved backward, and there are small cavernous spaces just in front of it. The myelin sheath stain shows no atrophy of the nerve stem.

Left Eye.—This is also normal in size and shape. The anterior chamber is free from coagulum. There is complete peripheral anterior synechia. The lens is *in situ* and clear. The ciliary body shows one minute white spot on the pars plana ciliaris, but is otherwise apparently normal. The vitreous humor is free from tubercles and otherwise normal. The retina and choroid are *in situ*, and normal. The optic disk is not cupped.

Histologic Examination of Left Eye.—The left eye shows changes that differ only in degree from those in the right. The older lesions, represented by scars in the cornea and sclera, are less well marked. Some of the old foci in the filtration angle, however, have become almost completely converted into hyaline tissue and thus show further retrogression than any corresponding foci in the right eye. The active tuberculous foci, both within the filtration angle and elsewhere, are more recent than those in the right eye, as indicated by the fact that the cells are more discrete. Numerous active foci are found in the anterior sclera both above and below, and a small one especially active is found just beneath the epithelium at the limbus. One active focus is seen in the cornea situated immediately beneath Descemet's membrane. Active foci are also found within and beneath the hyaline tissue in the filtration angle from which they sometimes extend into the cornea. The iris shows numerous tuberculous synechiae, and in addition small tubercles within the stroma near the pupillary margin. The iris is free from the lymphocytic nodules seen in the right eye. In fact, the eye as a whole shows much less lymphocytic infiltration than the right eye.

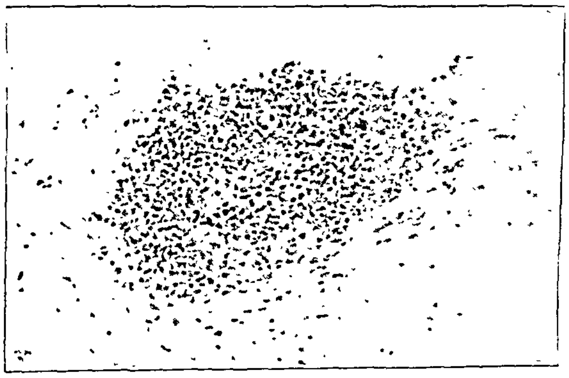

Fig. 8.—Small tubercle in anterior part of vitreous humor; × 145.

The ciliary body shows a few small recent foci on its surface, but none of such size or so old as those in the right eye. Below there is a minute tubercle 0.1 mm. in size, composed of discrete endothelial cells adherent to the pars plana (Fig. 7). In another place there is a disk-shaped nodule 0.4 mm. in diameter on the surface of the pars plana, while beneath the epithelium there are two small tubercles. In still another place there is a small tubercle in the stroma that is just beginning to invade the epithelium.

The retina, choroid, and optic nerve are free from tuberculous foci and present the same appearance as in the right eye.

BACTERIOLOGIC EXAMINATION

Numerous sections stained for tubercle bacilli show no bacilli in the lesions of the eyes, hypophysis, or lungs. Spreads from the tubercles of the vitreous humor, made before fixation, are also negative for bacilli. A piece of the ciliary body from the right eye, containing the largest one of the tuberculous foci, was introduced into the anterior chamber of a rabbit's eye. This adhered to the surface of the iris but was completely absorbed without producing tuberculosis.

Pathologic Diagnosis.—Tuberculosis of the hypophysis cerebri. Old pleural adhesions. Small conglomerate tubercle, base of right lung. Old endocarditis. Hyperplasia of lymph follicles of intestines. Chronic bilateral tuberculous scleritis, keratitis, iritis and cyclitis. Tubercles of the vitreous humor.

In spite of the inconclusive tuberculin test and the negative bacteriologic findings, there can be no doubt that this was a case of tuberculosis. The lesions in the lung, hypophysis, and eyes were typical, mutually corroborative, and incapable of any other interpretation. Moreover, the ocular history and clinical picture were perfectly characteristic of chronic ocular tuberculosis.

This case proves, so far as it is possible for a single case to do so, that complete destruction of the hypophysis cerebri is incompatible with life, for there can be no doubt that death was due to loss of function of the hypophysis resulting from its complete tuberculous involvement, since at autopsy no other cause for death could be found. In other words, this was an extreme case of hypopituitarism. Unfortunately, this fact was not recognized during the life of the patient, and the case was not treated or investigated from this point of view. Some of the more important clinical symptoms, however, were noted. These were the cessation of the menses eight months before death, polyuria and polydipsia, and marked mental dulness. There was not undue adiposity, though the amount of subcutaneous fat was greater than would have been expected in view of the little nourishment the patient could be induced to take. The persistent low temperature was characteristic of hypopituitarism, but was equally so of chronic ocular tuberculosis. The terminal symptoms of hypopituitarism have not been described in a series of cases, so that whether or not those observed in this case can be regarded as characteristic is uncertain. The attacks of syncope and the gradual onset of coma might have been expected. The diarrhea and abdominal pain, both probably due to exaggerated peristalsis, beginning ten days before death, were perhaps analogous to the hiccoughs of Addison's disease.

CASES IN LITERATURE

In the literature I have been able to find reports of only eight cases of hypophyseal tuberculosis, none of which was associated with ocular involvement.

Hueter[4] and Heidkamp[5] describe one case each of generalized tuberculosis with death from tuberculous meningitis, associated with tuberculosis of the hypophysis. In Sommer's[6] case—this was also one in which death occurred from tuberculous meningitis—the hypophyseal involvement was probably by extension from tuberculosis of the sphenoid bone. In the case of Lancereaux[7], death was due to pulmonary and intestinal tuberculosis, and the hypophysis was found enlarged to double normal size and pervaded by miliary granulations. The case of Lucien and Parisot[8] was one of diabetes mellitus with death from subarachnoid hemorrhage, in which old pulmonary tuberculosis and miliary tuberculosis of the hypophysis were found. In Beck's[9] case, in which death was due to sepsis, the hypophysis had been converted into a large encapsulated tubercle, and there were no other evidences of tuberculosis.

Wagner's[10] case was that of a scrofulous girl aged 13, with ozena, slight glandular swelling, and attacks of conjunctivitis. There was sudden onset of convulsions followed by coma and death within six hours. At autopsy the hypophysis was found completely converted into a tubercle. There were no other tuberculous lesions, but the right lung showed extensive pleural adhesions. (Hueter regarded this case as probably one of gumma of the hypophysis.)

In the case of Haushalter and Lucien,[11] the patient was a girl aged 6½ years. There was marked polyuria and polydipsia, but the urine was free from albumin and sugar. The child was in good spirits. The temperature was never above normal; the pulse-rate was 100. The skin was rough and dry. There was sudden onset of convulsions which lasted fifteen minutes, followed by coma and death. At autopsy the tuber cinereum was found replaced by a large tubercle which had extensively involved the hypophysis by way of the infundibulum. No tubercle bacilli could be found. There was a caseous gland the size of an almond to the right of the trachea and a fibrous tubercle at the apex of the right lung. The latter also showed adherent pleura posteriorly.

In only the last two of these cases could death be attributed to the involvement of the hypophysis. In both, as in my case, death occurred suddenly and unexpectedly. In both there were convulsions, however, whereas in my case these were absent. This may have been due to the fact that these cases were in children in whom convulsions readily occur, or to the fact that the destruction of the hypophysis was more rapid than in my case. Only in the case of Haushalter and Lucien were diabetes insipidus and polydipsia noted, but it is possible that they were present in some of the other cases and overlooked.

The question of the relation of simple polyuria to lesions of the hypophysis is a complicated one. Schafer and Magnus have shown that the injection of extracts of the posterior lobe into animals produces temporary polyuria. Cushing's[12] researches also indicate that polyuria of hypophyseal origin is due to involvement of the posterior lobe, but his experiments are apparently contradictory as to whether it results from overactivity or underactivity of the latter. Thus he finds that manipulation of this lobe produces temporary, whereas its complete removal causes prolonged polyuria. The present case, as well as that of Haushalter and Lucien, would seem to prove that depressed activity of the hypophysis may cause polyuria. This is supported by the fact that clinical observations show that simple polyuria is associated with symptoms of hypopituitarism rather than with those of hyperpituitarism. Possibly the relatively transient polyuria that results from a sudden excess of pituitary secretion in the blood may be produced in an entirely different way from that of the persistent polyuria of hypopituitarism.

An interesting question concerns the possible relationship, in the present case, of the hypophyseal, pulmonary, and ocular lesions. Judging by the time of onset of clinical symptoms, the duration of the ocular tuberculosis was definitely known to be three years. That the process in the hypophysis could have been of equal duration is possible but improbable. Its duration, however, was certainly over eight months, since the first hypophyseal symptom noted, cessation of the menses, occurred eight months before death. That the hypophyseal lesion could have given rise to the ocular tuberculosis by way of the optic nerve is hardly conceivable. The chiasm was only slightly involved at death and there were no foci in the optic nerve or in the chorioid, so that for the eyes to have been infected in this way it would have been necessary for retrograde metastases to have traveled along the subvaginal space and thence along the subchorioidal space into the anterior chamber without producing any lesions in their transit. On the other hand, for similar reasons, it is almost equally improbable that in the reverse way the ocular lesions could have infected the hypophysis. In all probability, therefore, the ocular and hypophyseal lesions were independent of each other, a conclusion that is strengthened by the fact that chronic ocular tuberculosis is relatively common while tuberculosis of the hypophysis is extremely rare.

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[4] Hueter, C.: Hypophysistuberkulose bei einer Zwergin, Virchows Arch. f. path. Anat., 1905, clxxxii, 219.

[5] Heidkamp, Hans: Beitrag zur Tuberkulose der Hypophyse, Virchows Arch. f. path. Anat., 1912, ccx, 445.

[6] Sommer, H.: Zur Tuberkulose der Hypophyse, Ztschr. f. Laryngol., 1910, ii, 355.

[7] Lancereaux, E.: Traité d'anatomie pathologique, 1883; Cited by Heidkamp, Note 5.

[8] Lucien, M., and Parisot, J.: Tuberkulose de l'hypophyse et diabète sucré, Rev. neurol., 1909, No. 16, p. 970.

[9] Beck: Tuberkulose Entartung des Hirnanhanges als Ursache der Diplopie und des Strabismus, Ztschr. f. d. Ophth., 1835, iv, 401.

[10] Wagner, E.: Tuberkel der Glandula pituitaria, Arch. d. Heilk., 1862, iii, 381.

[11] Haushalter, P., and Lucien, M.: *Polyurie simple et tubercle de l'hypophyse*, Rev. neurol., 1908, p. 1.

[12] Cushing, Harvey: Concerning Diabetes Insipidus and the Polyurias of Hypophyseal Origin, Bull. Mass. Med. Soc., 1913, xxiv, 25.

There can be little doubt that the tuberculous focus which gave rise to the ocular and hypophyseal lesions was the small conglomerate tubercle at the base of the right lung. The latter may have represented the recurrence of an old lesion, perhaps originally associated with the old pleurisy in this situation, for a fresh infection would have been expected to produce a more active type of tuberculosis. The persistent low temperature and the absence of a well-marked tuberculin reaction are likewise against a recent infection, as is also the fact that tubercle bacilli could not be found in sections of any of the lesions. A low order of virulence of the infecting organisms was indicated by the negative result of animal inoculation, although it is possible that the amount of material used for this purpose was insufficient.

As is well known, patients having chronic ocular tuberculosis seldom if ever die from pulmonary or generalized tuberculosis. The present case is not a real exception to this rule, since it is evident that death would not have ensued had it not been for the chance involvement of such an important structure as the hypophysis. Occurring elsewhere, a lesion of such small size in a case of this type would undoubtedly have healed. This case, in fact, affords the first demonstration based on anatomic findings of how insignificant the systemic tuberculosis may be in cases of chronic ocular tuberculosis.

Each eye in this case showed the typical clinical picture of recurrent tuberculous sclerokeratitis. While the case was under my observation there was active keratitis, but the only clinical evidence of scleritis was the presence of the corneal scars extending out from the limbus. Nevertheless, on microscopic examination the anterior part of the sclera in each eye showed numerous active tuberculous foci, a fact that suggests that scleritis may often exist without characteristic clinical manifestations, especially when in association with tuberculous keratitis.

The lesions of the cornea, iris, filtration angle, and surface of the ciliary body were similar to those previously described by me. The tuberculous synechiae at the pupillary margins were especially well marked. The chorioid and retina were free from tubercles. None of the ocular lesions showed caseation, but simply epithelioid and giant cells and more or less fibrosis. The right eye, in addition, showed two features not hitherto described, namely, the unusual type of tubercle on the posterior surface of the cornea, and the tubercles of the vitreous.

Elsewhere I have brought forward evidence, which I believe to be sufficiently conclusive, that in chronic ocular tuberculosis the infection of the ocular tissues takes place from the aqueous humor. The bacilli reach the latter from the blood through the ciliary processes, and are then carried to the filtration angle, whence they may pass into the cornea or sclera. They may also be deposited on the ciliary body or carried into the iris, producing focal lesions here, or into the subchorioidal space, where they may give rise to chorioidal foci. In experimental ocular tuberculosis produced by injecting dead tubercle bacilli into the vitreous or aqueous humors, all these lesions were produced, and in addition sometimes tubercles of the retina and vitreous. It is evident that the ocular lesions in the present case had a similar origin. The vitreous tubercles of the right eye were identical in appearance with those produced experimentally. The foci involving the surfaces of the ciliary body in each eye were clearly due to infection from the aqueous humor, since all stages in their formation could be observed, beginning with a minute nodule of endothelial cells on the surface of the intact epithelium. A few tubercles, however, were found entirely beneath the epithelium; and these might have been regarded as direct blood metastases, were it not for the fact that the experiments referred to demonstrated that minute tubercles can pass through the pars ciliaris retinae into the underlying stroma without leaving permanent defects in the epithelium.

It will be noted that this theory necessitates the assumption, as yet unproved, that tubercle bacilli may pass from the vessels of the ciliary body into the aqueous humor. The evidence for the theory, however, is otherwise so strong, it seems to me, that it may be regarded as sufficient to establish this assumption as a fact. It is known that bacteria may be excreted by the kidneys, so that *a priori* there is no reason why they cannot be excreted by the ciliary processes. If this is so, it may be asked why tubercle bacilli are not similarly excreted in cases of active tuberculosis. This is probably due to the fact that here the conditions of immunity are different from those existing in chronic ocular tuberculosis, so that when bacilli get into the blood they are either quickly destroyed or immediately produce lesions wherever they happen to lodge, which in case of the eye is most often within the choroid. It may also be asked why other organisms are not sometimes excreted into the aqueous humor. The answer to this is that there is no evidence that under certain conditions of immunity this may not happen, or, in fact, that other forms of iritis and uveitis may not be produced in this way.

A survey of the features of chronic ocular tuberculosis in general, including those of the present case, makes it plain that there is something special about this type of tuberculosis in addition to the mode of origin of the eye lesions. This is indicated among other facts by the following:

1. Chronic ocular tuberculosis almost never occurs in cases in which there are well-marked clinical signs of systemic tuberculosis and in which, therefore, metastases would presumably be most apt to occur. On the contrary, it occurs chiefly in cases in which it is difficult or even impossible to find any other indications of tuberculosis. The present case is in this connection a striking example.
2. Although chronic ocular tuberculosis is rare compared to the incidence of tuberculosis in general, yet when it occurs it is almost always sooner or later bilateral, thus showing plainly that it does not represent chance metastases.
3. It occurs almost exclusively in adults, and sometimes even in patients of advanced age.
4. It occurs far more frequently in females than in males.
5. The temperature is almost never elevated and is often subnormal.

6. A large dose of tuberculin is usually required to produce a constitutional reaction, and rarely a tuberculin reaction cannot be obtained at all.

7. Acid-fast tubercle bacilli seldom if ever can be demonstrated in the lesions.[13]

8. Animal inoculations of the lesions usually if not always give negative results.

To account for the foregoing facts, I venture to advance the following hypothesis. It is, briefly, that a condition is established in which the tissues of the host and the infecting organisms have become relatively tolerant with respect to each other. This condition is due to the fact that the tissues and organisms have existed so long under the same environment that they have developed similar immunities. The mutual tolerance is, however, not absolute, so that lesions of slight intensity but of long duration are produced, and the growth of the organisms is to a greater or less degree inhibited.[14]

According to this hypothesis the history of a typical case of chronic ocular tuberculosis may be reconstructed thus: In early life, most often in childhood, the patient becomes infected with tubercle bacilli, perhaps, usually of the bovine type. A sufficient degree of immunity is quickly developed and the lesions heal without having become extensive. Many of the bacilli, however, remain alive in the lesions. In the course of years, the bacilli become more or less active from time to time, owing to varying resistance of the patient, and as a result the tissues and bacilli become more and more tolerant of each other. The bacilli become not only relatively but also absolutely less virulent, and lose their acid-fast property.[15] At some time under these conditions the resistance of the patient becomes depressed to an unusual degree, and the original lesions take on renewed activity. Bacilli are now at times given off into the blood, but owing to their small numbers, lack of virulence and the resistance of the patient, metastatic lesions are directly produced only exceptionally.[16] From time to time, however, bacilli pass from the capillaries of the ciliary body into the aqueous humor, where, owing to the lack of immune substances encountered, they proliferate and then sometimes give rise to the various lesions of chronic ocular tuberculosis, as already described, of which those of scleritis and keratitis are the most frequent. Many times, no doubt, the bacilli pass into the canal of Schlemm and are carried from the eye without producing any lesions. On account of the relative inactivity of the bacilli and diminished sensitiveness of the tissues to tuberculo-toxins, the ocular lesions do not reach large size and are often associated with little or no leukocytic infiltration. The resistance of the patient now becomes reestablished and the lesions heal. After a shorter or longer interval, the resistance again becomes lowered and the preceding process is repeated, with the addition that some of the older ocular lesions again become active.

101 Newbury Street.

ABSTRACT OF DISCUSSION

Dr. Ervin Török, New York: The way in which tuberculosis of the eye develops is still an open question, but I think there is no doubt that it must be a secondary lesion in most cases. Except for tuberculosis of the conjunctiva, cornea, sclera and lacrimal organs, when we may assume that a break in the epithelium occurred through which infection entered, no other explanation can be given. The bacilli are carried to the eye by the blood and I have read with great interest Dr. Verhoeff's theory by which he explains how the bacilli get into the interior of the eyeball through the ciliary processes, and the ocular tissues are then infected through the agency of the aqueous humor. The theory is very interesting and is true in some cases, as Verhoeff's animal experiments have undoubtedly shown. I do not think, however, that this is the rule, or that it is necessary to assume that the bacilli pass into the aqueous through the ciliary body without infecting it, and again from the aqueous back into the ciliary body, then infecting it. I rather think that the most common way of infection is the direct way: the bacilli are carried in the blood and are deposited in the eye in one of its tissues, if, for any reason, its resisting power is lowered. Those tissues of the eye are most frequently affected that are most abundantly supplied with blood-vessels, that is, the tissues of the uveal tract, and I doubt whether a tuberculous scleritis or sclerokeratitis, as a primary disease of the eye, exists. I think that in all of these cases the primary focus of the eye is in the ciliary body and the nodules on the sclera develop later, and consequently in reality are symptoms of a tuberculous cyclitis.

The cause of this lowered resisting power is of course hard to determine. In a great many cases, if we inquire carefully into the previous history, we shall find that the patient has had some trouble with the infected eye previous to his tuberculous trouble. This would also explain why we find that in a great many cases only one eye is affected.

From a practical point of view, the most important test to perfect the diagnosis is the tuberculin test. The subcutaneous test is the one we usually employ, giving the patient 1, 3 and 5 mg. at three-day intervals. Attention must be paid to the reaction at the site of the injection, to the local reaction of the eye, and to the general reaction.

I fully agree with Dr. Verhoeff that large doses of tuberculin are necessary to produce the general reaction, and even then it is sometimes negative. Here again the temperature and the patient's subjective symptoms are important.

Dr. M. Schoenberg, New York: I object to Dr. Verhoeff's theory as to the manner in which the chronic tuberculosis originates and spreads. His argument, published some time ago in the *Archives of Ophthalmology*, includes, to my mind, a fundamental error. His experiments have been made with dead tubercle bacilli, which, it seems to me, do not conform themselves to nature. There is no such thing as a condition in the eye produced by tuberculin injection in itself. If Dr. Verhoeff had performed the experiments by using living tubercle bacilli it would be much more conclusive. He says he could not use the living bacilli because they produced such an acute reaction that the study of the processes was impaired by the suddenness and acuteness of the processes. I take issue with this statement, as I have been engaged in a series of experiments on ocular tuberculosis in rabbits for the last few months in the laboratory of the Eye and Ear Infirmary in New York, and I have succeeded in producing a chronic, slow, progressive type of iritis by the injection of a new strain of human tubercle bacilli. I have also produced another type, a very acute, progressive general uveitis by injecting into the anterior chamber human tubercle bacilli which had been sensitized for about twenty-four or forty-eight hours. I would like to hear Dr. Verhoeff's views in the light of his own experience, of the reason why tubercle bacilli from a broken-down gland or some other tissue attacked, in his remarkable case, only the hypophysis and the ocular tissue. Why should they not attack other tissues? In the light of the work done by Rosenow and some other Chicago men it could be explained on the assumption that there are numerous strains of tubercle bacilli, and, as with other organisms, each strain has an affinity for particular tissues, just as drugs have affinity for certain tissues in the body.

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[13] I have found that altered pigment granules may occasionally stain by the carbolfuchsin method and appear not unlike tubercle bacilli. This no doubt has given rise to error.

[14] This theory, it seems to me, also explains well the parasyphilitic affections. Thus it explains why they are not amenable to mercurial treatment, since the spirochetes and body cells have become to such an extent alike in their vital processes that drugs no longer act differentially on the organisms. Possibly it explains also why hereditary interstitial keratitis is likewise resistant to treatment.

[15] I have shown experimentally that dead tubercle bacilli may lose their acid-fast property when injected into the eyes of immunized animals, and yet remain capable of producing tubercles.

[16] The thought naturally suggests itself here that it is to such relatively benign metastatic lesions that certain forms of tuberculous choroiditis, retinitis, etc., are due.

Dr. E. V. L. Brown, Chicago: In corroboration of Dr. Schoenberg's statement that there are undoubted cases of tuberculosis of the eye that do not react to tuberculins, I wish to recall the article by my associates Drs. Dodd and Lane of Chicago, read before this Section two years ago, in which miliary tuberculosis with the organism was identified in the ciliary body and iris. Successive doses up to 10 mg. had been used with no reaction on the part of the patient.

Dr. R. L. Randolph, Baltimore: How did Dr. Schoenberg inject living organisms into the eye, in what medium were they suspended and how much was injected? The organisms I have dealt with, no matter how slightly pathogenic they may have been, have always been followed by more or less reaction when injected into the eye. I was very much surprised to hear Dr. Schoenberg's interesting observations on this point.

Dr. F. H. Verhoeff, Boston: I cannot agree with Dr. Schoenberg that my experiments on rabbits were vitiated by the fact that dead instead of living tubercle bacilli were injected into the vitreous or aqueous humors. The purpose of the experiments was simply to show where the bacilli finally lodged in the eye, that is, to show the location of the lesions to be expected relatively avirulent if tubercle bacilli should be secreted by the ciliary body into the aqueous humor. In this respect the experiments were eminently successful. I agree with Dr. Schoenberg that the involvement of the human eye in chronic ocular tuberculosis is due, at least in part, to some peculiarity in the character of the bacilli, and in my paper I attempt to give the reason for this peculiarity.

TUMORS OF THE OPTIC NERVE*

W. GORDON M. BYERS, M.D.

MONTREAL

This paper is intended as a contribution to the surgery of those primary tumors which occur in the optic nerve. As long ago as 1901, from the laboratories of the Royal Victoria Hospital, I issued a monograph, with which possibly some of you may be acquainted, dealing more especially with the pathologic aspect of the subject. I now propose to lay before this Section of the American Medical Association the experience which I have acquired since that time in the clinical aspects of these cases and in the operative procedures for their removal. As preliminary to that, however, I shall be obliged to define more clearly the conclusions at which I have arrived on the pathology of these growths.

Simultaneously with the arrival of the invitation that I should address this meeting, I encountered a clinical experience which encouraged me to undertake the task, for tumors of the optic nerve are of such rare occurrence that most men, even in a life's experience, do not encounter them; and a surgeon seeing the condition for the first time must almost of necessity turn to the literature for guidance.

Let me, then, direct your attention to a few facts concerning the pathology of these growths. In the investigations spoken of, I came to the conclusion, with very material assistance from Professor Adami, in whose laboratory at the Royal Victoria Hospital, Montreal, my studies were conducted, that tumors of the optic nerve, growing within its dural sheath, could be rather sharply divided into two main groups. In the first place one had to do with growths the basis of which was essentially an overgrowth of the fibrous connective-tissue elements of the nerve, but very protean in character, inasmuch as one found every phase of development from the embryonic myxomatous type to firm fibrous bands. The appearances were unquestionably influenced by conditions of stasis in the lymph and venous channels which resulted solely from the local anatomic arrangement of the parts; and altogether the changes suggested those characteristically present in cases of elephantiasis. These findings were in agreement with those of practically every student of the subject as a whole, and can still perhaps be best described by the term "fibromatosis," which I used in the title of my first contribution to the subject.

In the second group of neoplasms the changes, varying somewhat in character, were attributable to a proliferation of the local endothelial cells, and the growths were classified as endotheliomas.

It seemed, too, from our studies, that these two groups were histogenetically closely related, that even, at times, it was possible for the indeterminate fibrous tumors to take on the more striking arrangement of the endotheliomas. As regards frequency I found from an analysis of the entire literature on the subject that the fibrous growths outnumbered the endotheliomas in the proportion of about thirty-five of the former to one of the latter.

Unfortunately, we know so little about the final outcome of these cases that it is impossible to make very positive statements in regard to their clinical behavior. We know that they are characteristically slow in their development; and the reports seem to show that recurrences, always of a purely local character, are rare, secondary growths being perhaps commoner after the endotheliomas than after the fibrous tissue-group. In this connection let me say again, however, what I previously laid great stress on in speaking of the prognosis in these cases, that in many, if not in the majority, of these cases, the tumor of the optic nerve is but part of a neoplasm with a more or less wide intracranial distribution which in its eventual development will bring about the death of the patient. Whether or not it is possible and permissible to do anything further in those cases in which it is perfectly clear after the removal of the orbital growth that an intracranial portion remains, is still an open question.

In considering this subject it is of equal importance to make note of the primary extradural tumors of the optic nerve, that is, growths which take their origin in, or from the outer surface of, the dural coat of the nerve. While by no means so common as the intradural growths, occurring probably in the ratio of about 1 to 5 or 6, they are more frequently encountered than the intradural endotheliomas whose histologic structure they almost invariably possess. Parsons' careful analysis of the published cases led him to believe that almost certainly at least three-fourths of these growths were of this nature, the remaining tumors being of a frankly sarcomatous type. Without entering into a consideration of the possible relationship of these tumors to the intradural variety, or attempting any conjecture as to their origin, one can say that, while these growths are, too, like the intradural variety, characteristically "slow and even" in their development, they are yet more rapid in their growth than the intradural type, as one would expect from the absence of the retaining dural sheath; that their removal is more often followed by recurrences, and that they may even, if Lawson's case be admitted (though it is questioned by Parsons) be followed by metastases. In a word, the extradural tumors are distinctly of a more menacing type than those within the dural sheath.

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The fact that most if not all of the intradural connective-tissue tumors are of a non-malignant character, and that these greatly outnumber the endotheliomas, might incline one to adopt an "expectant" attitude, especially in those cases in which, as often happens, the neoplasm over long periods seems to be making little or no progress. This is especially true when other conditions are present that favor a policy of waiting, that is, pregnancy, the need of nursing a child, or profound nervous or other systemic disturbance; and always there are to be considered the dangers inherent in the operation and in the anesthetic, and the question of mutilation, especially in women.

A careful consideration of this attitude leads one, however, inevitably to the conclusion that it is incorrect from every point of view. In the first place, because it is impossible to differentiate clinically the three types of growths whose pathologic features have just been described. All these tumors have exophthalmos, in or near the line of the orbital axis, and profound or complete loss of sight as their characteristic symptoms; but, while it can be said that the possibility of an intradural tumor diminishes and that of an extradural neoplasm rises in proportion as the degree of sight increases, this statement can be taken only very generally; for there are marked exceptions on both sides. The ophthalmoscopic changes and the other signs as described are, too, of no value in making a differential diagnosis; and even the age factor coincides. A surgeon can never be certain, then, that he has to do with a growth of the "fibromatosis" type; he has always to keep in mind the possibility of an intradural endothelioma or more especially of an extradural neoplasm of this nature. An attitude of expectancy here can only give rise to conditions which at best will necessitate a more radical operation, and at worst will jeopardize the patient's chances of recovery.

In the second place, a waiting policy is unjustifiable in tumors of the optic nerve because one cannot ever be sure of the size, situation, or rate of development in any given growth, at any given moment. It is notorious that in these cases the exophthalmos, the principal index, is often pronounced out of all proportion to the size of the neoplasm, and that it frequently undergoes variations that bear no relationship whatever to the dimensions of the swelling. The explanation of these features is to be found in conditions of stasis and edema in the lymph-spaces in and about the optic nerve and eyeball; and perhaps at times in the buckling of a piece of uninvolved nerve. There are so many exceptions that it can be said only in a very general way that early pain, conspicuously absent in these cases, would rather suggest a development in the apex of the orbit, and an early neuritis or atrophy involvement of the anterior portion of the nerve. Increasing hypermetropia, valuable when present, too often fails us to be relied on; and palpation is seldom of any assistance, and may even be misleading.

Finally, considering the matter from the point of view of the operator who wishes while removing the growth to retain the eyeball *in situ* (and the desirability of this effort is now so well established that I shall not take up your time in defending the position), there is every reason in favor of early and immediate interference. It can be affirmed with emphasis that no matter what procedure is adopted, the larger the growth the greater the manipulation that is necessary, with its consequent dangers to the cornea and to the blood-supply of the globe, and the fewer the chances of achieving the end desired. In illustration of the points which I have tried to adduce let me cite the two following cases:

Case 1.—Miss B., a nurse, aged 44, consulted me on Jan. 25, 1910, for blurring of the right eye noticed during the preceding few weeks. The ophthalmoscope showed no changes in either eye, but, while the vision of the right side equaled 6/5 —, that of the left was only fingers at 1 foot. The diagnosis, uncertain at first, became, five months later, clearly one of tumor of the optic nerve, when slight proptosis appeared along with beginning pallor of the optic disk.

The patient had a most deeply rooted objection to an operation and dreaded the disfigurement. Influenced by her and by an imperfect apprehension of the factors which I have already set forth at length, I decided to follow the case in an expectant way.

The proptosis developed very gradually during the next three years without any change in the refraction of the eyeball and with only slight involvement of the musculature; but during the summer of 1913, the rate of progress was much more rapid, the exophthalmos becoming noticeably greater, the excursions of the globe much more restricted, and severe neuralgic pains a pronounced feature. The patient's general condition was somewhat impaired, apparently, however, from pain and loss of sleep rather than from the direct influence of the tumor on her constitution.

On the patient's admission to the hospital, Oct. 15, 1913, the eyeball showed a proptosis, directly in the line of the axis of the orbit, of about 2 cm.; total restriction of movement, except downward and inward, where the excursion was about half the normal; complete atrophy of the optic disk; and nothing on palpation. No changes were made out in any other part of the body; and the other eye was quite normal in every respect. The growth was removed October 16, in the manner described later on, and recovery was quite uneventful. At present there is no sign of recurrence, and the patient's general condition is excellent.

The macroscopic examination of the orbital contents showed a large tumor-mass surrounding the posterior surface of the globe and extending into the orbital tissues beyond the muscular cone; but the dural sheath was so disintegrated and invaded by the growth that it was impossible to say whether the neoplasm had originated within or without this structure. Microscopic examination also failed to clear up this point. The growth was pronounced to be "fundamentally endotheliomatous" by my colleagues, Drs. Gruner and McMillan, who sent me the following minute description: "The tumor consists of lobulated masses of triangular shape, separated by broad connective-tissue septa. The lobules are partly solid and partly take the form of acinous tissue, with numerous polygonal spaces of fairly uniform size, filled with material which stains blue with hematoxylin and pink with carbolthionin. The adjoining spaces are separated by two layers of cells, the lining of each space, respectively. There appears to be no fibrous tissue between the acini at all, and, speaking broadly, many fields can be found which closely resemble normal thyroid tissue. The angles between the spaces are filled up with cells similar to those lining them, and thus solidity is imparted to the mass. The cells lining the spaces are small, cubical or slightly flattened, and have a relatively large, intensely staining nucleus of oval shape; but definite cell-borders cannot be distinguished. The cytoplasm is rather acidophil; occasionally, a few cells are found mixed up with the mucoid matter of the space. Some of the cells show a tendency to vacuolization in the vicinity of the nucleus; but the cytoplasm does not develop a foamy structure, however abundant the mucoid material may be. The shape of the lobule is not always the same; a number of them are elongated while others differ in having no definite outline and being made up of ramifying, linear groups of cells, devoid of any lumen formation. Transition forms between this type and the first described are to be found. These are areas in which the material separating the ramifying column is undergoing mucinous change, staining purple instead of pink or blue, but otherwise showing the same appearance as is seen in the gland spaces already referred to. Another type of lobule is that composed of densely packed, darkly staining, small rounded cells without any lumen formation of any kind. The stroma of the tissue is composed of very coarse fibrous tissue in which there are few cells. It is variable in thickness, the smallest lobules being enclosed by the largest amount. In many cases the septa become converted into hyaline lines staining brightly with eosin. The muscular bundles are pushed aside by those nodules of growth which are present in that situation."

The history of my second case is a curious story of functional disturbance and of simulation based apparently on numerous organic troubles. What relationship all these bear to the changes in the optic nerve it is of course impossible to say.

CASE 2.—The patient first came under observation at the Royal Victoria Hospital for profound chlorosis and gastric ulcer. Three years later she was operated on at the same institution for appendicitis; and shortly after this, Oct. 5, 1900, I saw her in the eye clinic for headaches which were worse after reading and sewing and had been especially bad since her abdominal operation. On the occasion of her first visit her sight was 6/6 on both sides, with a manifest hypermetropia of half a diopter; and the fundi were unquestionably normal. Following the instillation of a mydriatic, she developed within the next few days the most typical example of functional amblyopia I have ever seen, great reduction of the central vision with contraction and inversion of the visual fields. She had typhoid fever in December, 1906, with a miscarriage during the course of the attack, and, following this, functional hemianesthesia. A year later, Feb. 15, 1907, she again came under my observation in the eye clinic, and I was surprised to find unmistakable signs of a tumor of the right optic nerve, and slight proptosis, with complete atrophy of the optic disk, the other eye being normal.

During the following years the patient had repeated miscarriages attributable to uncontrollable vomiting that her pregnant state engendered, and several gynecologic operations for the relief of uterine disturbances. I saw her a few times during this period, but her wretched state of health, coupled with the fact that the tumor showed little or no apparent progress, seemed to justify a waiting policy. Following a severe operation on one of her kidneys in the spring of 1913, the condition became, however, rapidly worse; and when I saw her in the autumn of the same year and advised removal of the tumor she consented to have it done.

At the time of admission to the Royal Victoria Hospital, Jan. 19, 1914, little or no restriction of the ocular excursions accompanied the moderately marked proptosis, and nothing could be made out on palpation. The ophthalmoscopic picture was that of a secondary atrophy of the optic nerve with the deposition of a good deal of fibrous tissue on the disk and along the vessels below. There was also an irregular band of atrophic retinitis running horizontally through the macular area.

The following day the tumor was removed in the manner which I shall presently describe, the eyeball being left in position. For several days following the operation there was a marked milkiness of the cornea suggesting the appearance which one sees following a lime burn of this structure; and there was marked pericorneal congestion. There remains now an apparently permanent opacity of the lower half of the cornea with superficial vascularization as in pannus, and this, together with a marked layer of exudation in the pupillary area, prevents one from obtaining anything but a dim red reflex from the fundus. The iris still remains somewhat discolored, the globe is slightly shrunken and squared, and the tension is quite soft; but the movements of the eyeball are practically full, and, though the lids are somewhat retracted, the general appearance is good.

The excised tumor measured 3 cm. in length by 1.75 cm. at its point of greatest breadth. It strongly suggested a phimotic penis in appearance, owing to the fact that it tapered markedly toward its posterior end and was constricted about its middle by a band of fibrous tissue. A macroscopic examination showed that the removal of the tumor at the posterior pole of the globe was incomplete, as was also the eradication behind. Microscopically the growth belonged unquestionably to the group of connective-tissue overgrowths which I have described at the commencement of this paper and very fully dealt with in my previous monograph.

The operations performed in these two cases, in both of which the principle of saving the eyeball while removing the growth was followed, can be described briefly.

In my first patient I employed Kroenlein's procedure, which consists I may say briefly for those not familiar with its details, in removing the tumor through an opening made in the external wall of the orbit. The only variation from the operation as originally described was that I used a strong septal saw to make the bony incisions instead of the chisel and mallet as recommended by Kroenlein. On entering the orbit I encountered a soft, almost gelatinous tumor, much larger than I anticipated; and it soon became apparent that it had grown to such a size and had infiltrated the tissues to such an extent that it was impossible to remove it through the lateral aperture. Accordingly a complete evisceration of the orbit was carried out after the osseous resection was replaced and the overlying flaps closed. Recovery was quite uneventful, the removal of the orbital contents not retarding in any way the healing of the incisions made during the first operation. At present there is no sign of recurrence, and the patient's general condition is excellent.

In view of the difficulties I had had with my first patient, I decided to employ a modification of Knapp's procedure rather than the Kroenlein operation to remove the tumor in my second case, because it was apparent that in this instance, too, the neoplasm had attained a considerable size. After tenotomizing the external rectus and opening the conjunctiva and Tenon's capsule for a short distance above and below, I had no difficulty in separating the sharply defined intradural growth from the surrounding structures; and I succeeded in removing the neoplasm very completely, and with practically no hemorrhage, by means of a stout tonsil snare, which lent itself very nicely, it seemed to me, to this purpose. Following this the external rectus was reattached and the conjunctival opening closed by sutures.

Criticizing Kroenlein's operation and Knapp's procedure in the light of this recent experience, and of previous cases in which I have made use of the latter method, I would say at the outset that Kroenlein's operation is adapted to the removal only of small, or at most, medium-sized growths. At best, one feels hampered by the smallness of the lateral opening; the deeper parts of the orbit are not so readily seen as one would think, owing to the tendency of the contents of the cavity to prolapse into the wound; and it is actually impossible to deliver large growths, except piecemeal, through the biggest aperture that can be made. On the other hand, the vascular supply of the eyeball is least interfered with by this method; the cornea perhaps is not quite so exposed to injury as in Knapp's procedure, and the orbit is not opened to infection from the conjunctival sac.

The Knapp method is suitable for any sized tumor of the optic nerve, it being possible with external canthotomy for an operator to procure practically any sized aperture he wishes. The only objection that can be made to it is that it opens up the orbit to infection from a field which cannot be sterilized. In the absence of tear-sac trouble, and with bacteriologic control, this fear, however, can be disregarded. With the method one works easily in an anteroposterior direction; and in those cases in which the tumor is not infiltrating the orbital tissues, these structures are prevented from prolapsing into the field of operation by Tenon's capsule. Further, with this procedure, if the operator finds the growth ineradicable, he can proceed to evisceration of the orbit without loss of time, and without the injury to the adjacent parts incidental to Kroenlein's operation. Viewing the matter as a whole, I look, then, on Knapp's method as easier to perform and more suitable for these cases than Kroenlein's procedure; and I am convinced that it alone can be satisfactorily employed when the growth has attained large dimensions.

The two cases which I have cited brought with them an experience which materially altered my views in regard to the treatment of tumors of the optic nerve. My previous work had obscured the potentialities of the few reported cases of intradural endothelioma, and I had not fully grasped the more menacing characters of the extradural tumors, which had not come within the scope of my paper. There remained only the impression of the connective-tissue growths, little if at all malignant, and characteristically slow in development; and the feeling that these could be followed in an expectant way, until pain or some such indication demanded their removal, much in the same manner as one does a fibroma of the uterus. My conviction in this matter was strengthened by the emphasis laid on the benignancy of these growths by numerous other investigators whose findings were substantially in accordance with my own; but it is clear now that the contingencies which I have mentioned have not been clearly apprehended or sufficiently accentuated, because the general conceptions of tumors of the optic nerve have been based almost exclusively on studies of the intradural connective-tissue variety.

The expectant attitude adopted in my second case, largely as the result of conditions which could not be controlled, was to a certain extent justified by the finding of a tumor of the benign fibromatosis type and by the ease with which it was removed. The changes in the intracranial portions of the nerve, which the microscopic examination clearly showed, occurred in all probability concomitantly with those in the orbital division. This supposition is based on the post-mortem findings in several cases of this kind to which I have already referred; but it is just possible that one had to do here with one of the more uncommon occurrences in which the growth develops in the anterior end of the nerve, leaving for a varying length of time a piece of uninvolved nerve between the tumor and the optic foramen; and that earlier interference might have resulted in an entire eradication of the process. In my first patient, however, it is apparent that under the same clinical picture one had to do with a growth of an unquestionably more malignant nature, as shown by its histologic character and its behavior in the tissues; and though I am persuaded that the tumor involved the cerebral end of the nerve from the outset, and know that the bony walls were not invaded, there is no question now in my mind that the right thing to have done in this instance was to remove the growth as soon as the nature of the condition became clear. Further, in view of the occurrence of neoplasms of this sort, I feel that the only safe practice to adopt in tumors of the optic nerve is to extirpate them as soon as possible after the diagnosis has been made.

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ABSTRACT OF DISCUSSION

DR. MARCUS FEINGOLD, New Orleans: Primary tumor of the optic nerve is a rare disease so that few of us are so fortunate as to see even one, much less three cases. Von Graefe's classical description of the clinical features made the diagnosis quite easy—the early blindness in contrast with the comparatively late appearing exophthalmos; the free mobility; the exophthalmos mostly directed forward; the youth of the patient, and the comparatively low malignancy, etc. But the pathologic side of the picture could not be settled early for several reasons.

In 1902 Dr. Byers tabulated all cases of intradural tumors published up to that time. In this tabulation tumors of differing nature are placed, from which Dr. Byers succeeded in isolating a group of tumors which are characterized by excessive connective-tissue formation, for which group he coined the name of fibromatosis.

Apparently a step nearer to the ultimate understanding of these tumors has been made by A. C. Hudson in a monograph on "Tumors of the Optic Nerve" (*Ophthalmic Hospital Reports*, xviii, 317). In it he states as the purpose of his paper "a supervision of the whole of the available cases based on a critical examination of their records and more especially their histological features." He divides the cases into three groups: Group A, containing 118 cases, the group of gliomatosis; Group B, 6 cases, fibromatosis of the nerve-sheath; Group C, 28 cases, endothelial tumors of the nerve-sheath. In Group A, the tumor tissue is characterized by cells of various appearance. Between the cells is found a product of degeneration of the cell processes, often determining the appearance of the tumor. Some of the tumors being harder and bearing the character of fibromatosis; others are more myxomatous in appearance and others have a more cystic character. Above all, however, "the overgrowth of glia tissue," the main characteristic of these tumors, is caused by the previous death of nerve-tissue from accident, traumatism, dyscrasia and vascular changes, etc. Group B is characterized by the enormous development of fibrous tissue in the nerve-sheath, the nerve suffering only secondarily by compression. Again, the fibromatosis of the dural sheath is only made possible by lesions of the nerve-tissue similar to those in Group A. This group is characterized by the absolute "innocent" character of the tumor. Group C is characterized by the endothelial nature of the cells and the whorl-like appearance they give to the tumor. They are analogous to the endothelial tumor of the brain membranes. Tumors of this group appear, on the average, later in life and have a tendency to invade the neighboring tissues and the exophthalmos precedes blindness in a large percentage of cases. In these cases, also intra-ocular extension of the growth has been found.

Mention, I believe, should be made of the suggestion of Greeff, based on a paper by Braunschweig, that a great many of the features of these tumors of the optic nerve point to and could be explained by an embryologic origin.

As to the treatment, one can only agree with Dr. Byers that very early operation is indicated before invasion of the cranial cavity has taken place. Of course, as much as possible, the operation should aim to retain the eye, and there is little to be added as to the kind of operation, except to mention the Legrange operation and the method as practiced by de Schweinitz (*American Ophthalmic Society Rep.*, 1911).

DR. G. E. DE SCHWEINITZ, Philadelphia: As Dr. Byers has pointed out in his admirable paper, intradural tumors of the optic nerve are of comparatively rare occurrence.

The growth in the second case was a psammomatous endothelioma. The bulk of the mass is made up of a coarsely and irregularly interwoven network of fibrous tissue in the midst of which are found numerous concentrically laminated psammoma bodies. In parts of the growth are groups of comparatively large embryonic connective-tissue cells of variable shape, provided with large round oval nuclei of the vesicular type. They are apparently of endothelial origin, and in picked fields their relation with small blood-vessels is clear, such vessels being seen in longitudinal section, often with branches, showing their walls formed of multiple layers of these elements, or they are seen in transverse section as whorls of endothelial cells, sometimes with the diminished lumen still appreciable, sometimes solidly closed. In these, more or less fusion of the cells may be made out, apparently with hyaloid change, and in a few places the development of the psammoma bodies in these masses of endothelial proliferation is evident. Their origin thus is clearly from vascular endothelium. A similar origin of psammoma bodies in the case of tumor of the orbit which I recently reported before the American Ophthalmological Society was imperfectly evident. It will be remembered that this origin of psammoma bodies is well discussed by Adami. Sand bodies in tumors of the optic nerve have been reported, if I am not mistaken, on several occasions, for example, by Ribbert, and in a psammosarcoma which existed as a primary extradural tumor of the optic nerve, and which was described by Bilroth many years ago.

I have been particularly interested in Dr. Byers' reference to Krönlein's operation, and would agree with him that it has a comparatively limited application, and that in many instances of orbital growth, not necessarily either an extradural or intradural optic-nerve tumor, most satisfactory operative results can be secured without resection of the wall of the orbit. In a discussion of this subject, in a paper which I presented before the American Ophthalmological Society a few years ago, I reported some cases of orbital tumor in which, without the slightest difficulty, rather large growths were removed, in these instances by an incision beneath the orbital arch.

Dr. Edward Jackson, Denver: I was interested in Dr. Byers' final conclusion with regard to the method of removing tumors of the optic nerve or small growths in the orbit. At the time Krönlein's operation began to attract attention, from my work on the cadaver I concluded that it must have a very limited applicability in ophthalmology. When we attempt to go in through the temple we have to go through an absolutely rigid canal, not distensible, not movable in any direction; so that its practical size is very much smaller than that of an opening through the soft parts that can be pushed freely to either side. I have for some years been measuring the prominence of the eyeball. The average of the corneal apex in from the outer angle of the orbit is between 16 and 17 mm. That means, on the average, that the back of the eyeball is not more than 7 or 8 mm. behind the angle of the orbit. In some normal eyes the posterior pole of the eyeball is on a level with the outer edge of the orbit, and in any case in which exophthalmos has become pronounced the eyeball has reached pretty nearly the situation that the posterior pole of the eye is only a millimeter or two behind the outer edge of the orbit. In such cases very little is to be gained by going back through the bony wall of the orbit. I think the operation can be justified in only a few orbits that have a thick orbital margin, a small orbital opening, with rather deep-set eyeball. In such orbits we would gain decidedly by going in according to Krönlein's operation.

Dr. W. C. Posey, Philadelphia: I have seen but one tumor of the optic nerve, a sarcoma of the sheath. That I removed by the Krönlein method. I have used this operation in four or five other cases and have found it a very valuable means of gaining access to tumors within the orbit. The difficulty in the operation has been the displacement of the triangular fragment of bone forming the outer wall of the orbit. If one tries to do this by means of the chisel, as recommended by Krönlein, one has great difficulty. I note that Dr. Byers recommends resection by means of a saw. About a year ago two French authors, Magitot and Landrieaux, recommended the removal of the fragment of bone by means of a flexible saw—the Gigli saw—getting the saw back of the malar bone and cutting forward. I have been very anxious to try this method on the living body, but no case has come under my care during the past winter. The Krönlein operation leaves practically no scarring. In the five or six cases in which I have employed the procedure I have had scarring in but one, and that occurred in a child 3 or 4 years old, who was suffering from a dermoid cyst which I first tried to remove by the ordinary incision into the orbit. The healing is so prompt following the Krönlein procedure, the scarring is so slight and the aid given to the operator so great that I do not hesitate to recommend it as a very efficient measure in nearly all cases of growths lying in the posterior part of the orbit.

Dr. John E. Weeks, New York: I want to bear testimony to the value of the Krönlein operation under certain conditions. I am afraid the impression gained from this discussion will be adverse to using it in many cases in which it would certainly give great aid. I have operated by the Krönlein method only four times; but in all the cases the aid afforded was certainly very great. One case was a large tumor occupying almost the entire portion of the orbit back of the globe. The lateral exposure of the orbital content was such as to enable me to outline the extent of the growth and to remove it satisfactorily. Another operation was in a case in which there was a small endothelioma occupying the apex of the orbit, which was removed. The exposure of the tissues at the apex of the orbit is much more easy and sataisfactory by a lateral opening than can be obtained through the natural opening in the orbit. In this case the tissues back of the globe could be thoroughly examined; but the growth at the apex of the orbit, which was only discovered after much search, in which Dr. Reese afforded me great aid, certainly would not have been disclosed if we had not made a lateral opening by the Krönlein method. I have resorted to the saw in almost all cases. I have, however, not used the flexible saw. I have attempted to use it but have not succeeded in passing it back of the bony structure readily, consequently I have used the ordinary stiff nasal saw with very good effect. The triangular piece of bone was readily detached and depressed and restored after the operative procedure. I think in tumors that occupy the apex of the orbit we get better exposure by removing the triangular piece of bone.

Dr. W. R. Parker, Detroit: I have performed the Krönlein operation on two occasions, once for the removal of a neurofibroma in the orbit, once for the removal of a dermoid cyst with origin at the apex of the orbit. While I believe that osteoplastic resection gave a better view of the apex of the orbit, I am forced to conclude that I could have operated in both cases without first having done an osteoplastic resection.

Dr. J. O. McReynolds, Dallas, Tex.: I wish to report on the use of radium in such conditions. A case in a child 15 months old presented a typical condition of glioma of the retina. The extirpated globe showed the endothelial character of the growth, with quite a good deal of calcareous deposit. It involved the retina and the optic nerve. After extirpation of the globe there was very rapid recovery. The parents desired to have Dr. Kelly of Johns Hopkins see the child. I asked Dr. Kelly to keep me posted as to progress under the use of radium. He sent me photographs taken at intervals of six days. Altogether there were three applications. The tumor was quite large and the patient almost in a state of convulsions. Within a period of three weeks the tumor had entirely disappeared and a normal-appearing cavity corresponded to the former situation of the growth. The child was supposed to be well and returned to its home in McAlester, Okla., but died after a period of two or three weeks from some cause unknown to me. I feel that at present we know so little about the exact value of radium that it is perhaps wise to report cases so that we may later determine just what forms of tumors are benefited by its application. It is probable that had the tumor not extended so far back into the cranial cavity when the radium was first applied the result might have been permanent.

Dr. M. Foster, New York: I believe that we are not justified in long delay after the diagnosis of tumor of the optic nerve, or indeed of any retrobulbar tumor has been made, before attempting to remove it and at the same time to save the eyeball. The serious question in most cases is whether the tumor is benign or malignant, for if the latter is the case the orbit should be exenterated, and any other intervention we may make will serve simply as an operative complication.

Taking the questions I suggested in order, I must say that as regards diagnosis I have found that Krönlein's operation gives free access to the outer part of the orbit, and enables me to examine the structures there with greater ease, greater exactitude, and, it has seemed to me, less traumatism to them, than I have been able to obtain through an incision in the conjunctiva. Therefore it seems superior to me as an exploratory operation. Second, by what route can a benign tumor be best removed? This varies. I would not do a Krönlein to gain access to a tumor presenting on the nasal side of the eyeball, whether or not I thought it appertained to the optic nerve; I would try to get it through an incision in the conjunctiva after temporarily dividing the internal rectus and retracting the eyeball outward. In spite of the experience I have just related I would be apt to make the same attempt to remove a small, free, accessible tumor in the outer part of the orbit, but in case I met with difficulties I would feel that I had the other operation to fall back on, and I would not make the attempt unless it seemed distinctly feasible. My point is that in the majority of cases of tumor of the optic nerve with which I have had to deal, the osteoplastic resection of the outer wall of the orbit has afforded me more direct access to them, has enabled me to diagnosticate them more accurately, and has permitted me to remove them with less injury to the other structures in the orbit, than the incision through the conjunctiva.

Dr. W. Gordon M. Byers, Montreal: The operations under discussion apply to the removal of tumors of the optic nerve. After careful consideration of the matter as a whole I should like to speak rather dogmatically in favor of Knapp's procedure for tumors of the optic nerve as being the easier and better procedure.

OCULAR MANIFESTATIONS OF THE TOXEMIA OF PREGNANCY

CLINICAL REPORT OF A CASE *

WARD A. HOLDEN, M.D.
NEW YORK

We know little about the ocular manifestations of eclampsia and their causation, and this single case is put on record because it seems to throw a little light on this obscure subject.

REPORT OF CASE

Patient.—Feb. 6, 1913, I was called to the Sloane Hospital for Women to examine the eyes of Mrs. G., housewife, aged 25. The following notes as to her condition while in the hospital are taken from the hospital records by the kind permission of Dr. E. B. Cragin and Dr. E. C. Lyons, the resident obstetrician. Feb. 3, 1913, the patient was admitted to the hospital and said that she was about seven months pregnant, for the second time; that she had vomited during the first three months of her pregnancy, and that for a month her feet had been swollen at night. Her chief complaints, however, were that for five days she had seen double, and that during this time the sight of each eye had grown rapidly worse. Her general condition seemed to be good, there was no toxic rash, the legs and feet were slightly edematous, the blood-pressure was 160 mm. and the urine (51 ounces on February 4) contained 20 per cent. albumin and many cells, and was alkaline. She was kept in bed on active eliminative treatment, and the urine increased greatly in volume and the percentage of albumin was reduced, while the reaction became acid.

Examination of the Eyes.—February 6 I found a paresis of the left external rectus and an absolute central scotoma in the field of each eye so extensive that vision was reduced to the recognition of movements of the hand, but this was possible in the entire periphery of each field. The fundi were normal in appearance except for a trace of retinal edema about the macula lutea in each eye, which was not sufficiently marked to cause obscuration of vision.

Course.—I advised the immediate induction of labor in order to save her vision, and the patient was at once delivered of an eight-months still-born child. From an obstetric point of view, she had a rapid and uncomplicated recovery, and her sight became rapidly better, while the albumin was reduced and the blood-pressure fell and she was discharged in good condition February 22.

March 3, 1913, I saw the patient again and found that her vision had returned within a few days after the operation and was $^{20}/_{20}$ in each eye with normal fields. There had been complete recovery from the paresis of the external rectus also; but she said that since leaving the hospital she had experienced much difficulty in seeing at night; and in each macular region of the retina, which had, a month before, been edematous, there was now an abnormal pigmentation. The fundi were otherwise normal.

July 22, 1913, the night blindness was said to be less pronounced, but the abnormal pigmentation was found to have spread from the macular region out to the periphery of each retina. On careful examination it was seen that the pigment of the retinal pigment epithelium had become rarefied in punctate spots and greatly increased in adjacent punctate spots. In the macular region many of the accumulations of pigment were confluent, giving this region a much darker appearance than normal when viewed with the ophthalmoscope by the indirect method. No colloid excrescences were found in the retina and the pigment seemed not to have wandered into the retina proper. The vision was $^{20}/_{20}$ in each eye. At this time there was still albumin in the urine and the patient complained of vertigo, pain in the back and transitory obscurations of vision. The Wassermann blood reaction was negative.

Oct. 9, 1913, the pigmentary changes were more pronounced.

Jan. 29, 1914, the condition was unchanged.

This curious chronic progressive disturbance in the pigment epithelium of the retina would seem to be due to the same toxic condition of the blood which, when more intense, caused paresis of one external rectus muscle and the retrobulbar affection of the optic nerves. The night blindness of scurvy, for example, must be attributed similarly to the action of the altered blood on the pigment epithelium, and this point will be mentioned later.

In the absence of an anatomic examination we can merely conjecture what was the cause of the paresis of one external rectus and of the large central scotoma in the field of each eye with normal optic disks and speedy recovery after delivery.

Weil and Wilhelm,[1] recent investigators of ocular disturbances in pregnant women, believe that the retention in the blood of certain salts causes hydropic disturbances—edemas, and eclampsia, with sudden blindness without ocular changes; while the retention of nitrogenous substances causes albuminuric retinitis and renders the prognosis grave.

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* Read before the Section on Ophthalmology at the Sixty-Fifth Annual Session of the American Medical Association, Atlantic City, N. J., June, 1914.

[1] Weil and Wilhelm: Obstétrique, iv, No. 3.

The characteristic lesion in eclampsia is a more or less localized edema of the intracranial tissues, of sudden onset. Complete transitory blindness with normal fundi is a fairly frequent symptom of eclampsia. In the rare cases of incomplete recovery of vision, a concentric contraction of the fields down to 10 degrees in each meridian, with good central vision, has been found. Lagrange and Abadie each has reported such cases, and Endelmann, describing a similar case, correctly called it double *homonymous* hemianopsia with preservation of a small central field in each eye. A homonymous hemianopsia on one side, followed later by a homonymous hemianopsia on the other, with preservation of a small central field in each eye, has been observed repeatedly in patients with advanced arteriosclerosis, the bilateral cortical or subcortical hemorrhages or thromboses sparing some of the fibers serving central vision.

In many of the cases of blindness in eclampsia we must suppose that there is an edema affecting the calcarine cortex or the optic radiation on each side, which in some cases causes destruction of tissues and therefore produces permanent defects in the fields of vision.

The question arises whether in our case also the visual and sixth-nerve symptoms might not have been caused by a bilateral edema of some parts situated near the optic chiasm, for it is not likely that central scotomas clearing up in a few days, with disks and retinal vessels normal at the time and also months later, were due to a true inflammation of the optic nerves.

Leber,[2] nearly forty years ago, offered the suggestion, apparently overlooked by most later writers, that a retrobulbar neuritis coming on suddenly after a coryza, with slight fundus changes, might be due to a periostitis of the optic foramen—a suggestion that is fully confirmed by Onodi in the recent elaborated English edition of his "Optic Nerve and Accessory Sinuses." Onodi finds that in the cases of retrobulbar neuritis due to sinusitis, there is a direct transmission of the infection from the lining membrane of the sinus to the lining membrane of the optic foramen, either through a dehiscence in the thin bony wall or along the perforating veins. The swollen periosteum compresses the optic nerve, affecting first the delicate axial or papillomacular bundle of fibers of the optic nerve, and thus causes a central scotoma.

Foster Kennedy[3] has put on record half a dozen cases of tumor or abscess of one frontal lobe of the brain, producing a central scotoma in the field of the eye on the same side by a direct pressure on the optic nerve behind its entrance into the optic foramen. I have observed two cases of this kind. Furthermore, though some others have not had the same experience, I found that a tumor surrounding the sheaths of the optic nerve far back in the orbit caused a sharply defined atrophy of the axial bundle of fibers alone.

The conjecture, therefore, would be that an edema —possibly of the anterior lobes of the brain, but more likely of the meninges and of the periosteum of the optic foramina which is continuous with the dura mater—brought about pressure on each optic nerve near its origin and on one sixth nerve which, as it passes to the sphenoidal fissure, lies very near the optic nerve.

The night blindness in this case was preceded by edema of the retina and of the ankles in a patient with supposed retention in the blood of saline elements. In scurvy, some of the saline constituents of the blood have been found to be in excess. Hence, it may be that, apart from the sclerosis of the choroidal vessels that leads to the degeneration of the pigment epithelium and thus causes night blindness in retinitis pigmentosa and other choroidoretinal affections, an excess of certain salines in the blood may be the cause of the faulty functional activity of the pigment epithelium that produces night blindness of a transitory character.

8 East Fifty-Fourth Street.

ABSTRACT OF DISCUSSION

Dr. R. L. Randolph, Baltimore: Dr. Holden's case adds another to a group with which we are all somewhat familiar and as to the treatment of which we are entirely agreed. It seems to me that we see in this case an early stage of what no doubt would have developed into either a full-blown retinitis or a general edema of the retina. In Dr. Holden's case the edema seems to have been limited to the region immediately surrounding the macula, though it is no uncommon thing to meet with rather wide-spread retinal edema in these cases. Some years ago I reported (*Bull. Johns Hopkins Hosp.*, June-July, 1894) five cases of retinal involvement in pregnant women in whom the ophthalmoscopic picture consisted largely of swelling and pallor of the retina. Evidence is at hand to show that permanent impairment of sight may follow too long a delay in inducing premature labor, but I may remark here that it is astonishing what an alarming ophthalmoscopic picture may be seen in the parturient woman, yet may be followed by complete restoration of sight with the delivery of the child. In one of my cases in which at a previous pregnancy a pronounced albuminuric retinitis occurred, the woman in her desire to have a child delayed the induction of labor and suffered in consequence partial and permanent loss of sight. It is clear, however, from what I can learn that these ophthalmoscopic findings in parturient women, findings known as edema of the retina and albuminuric retinitis, are rarely followed by permanent and complete blindness, though considerable impairment of sight may be present at the time. This favorable termination is largely due, of course, to the usual attitude of the medical attendant in dealing with these cases, that is, promptly to induce labor, on account of the danger not only of the loss of sight but also of eclampsia. In all of the cases which I have seen there was albumin in the urine. The treatment is clearly indicated. The prognosis is excellent. When the condition occurs in the first six months of pregnancy and especially when associated with violent headaches, pregnancy should be terminated at once. Visual disturbances in the last seven weeks of pregnancy, when unassociated with marked ophthalmoscopic changes, should not in themselves call for the induction of premature labor and this is especially true in the last two weeks of pregnancy. The occurrence of retinitis in one pregnancy does not mean that the woman will be likewise affected in a subsequent pregnancy even though headaches be present and there be albumin in the urine, so long as the fundi are free of ophthalmoscopic changes. In the one case in which I had an apportunity of making an anatomic examination the principal changes consisted in great edema of the retina and, as a consequence, increased depth of the latter. Hyperplasia of the retina especially marked in the nerve-fiber layer was observed. The presence of hyaline masses throughout the retina and the formation of spaces was frequently noted. As a general thing the changes were more striking near the disk though visible along the retina as far forward as the ora serrata.

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[2] Leber: In Graefe-Saemisch Handbuch der gesamten Augenheilkunde, Ed. 1, 5.2, p. 814.

[3] Kennedy, Foster: Am. Jour. Med. Sc., September, 1911, p. 355.

Dr. James Bordley, Baltimore: Dr. Holden makes the suggestion in the summary of his case that an edema of the anterior lobes of the brain, but more likely of the meninges and of the periosteum of the optic foramina which is continuous with the dura mater, brought about pressure on each optic nerve, and that these changes possibly resulted in central scotoma and paralysis of the sixth nerve. Dr. Holden points to the field-changes in frontal-lobe tumors in support of his hypothesis. In the service of Dr. Cushing such a case came to necropsy. We sent the optic nerves to Dr. Verhoeff for examination. He could find no special evidence of change in the central bundle, but did find marked peripheral changes. The central blindness in this patient was of over a month's duration. In other words, the pressure exerted on the nerve had damaged the peripheral fibers, but could hardly be held accountable for the loss of central vision.

In a case of optic-nerve atrophy following a basilar fracture necropsy revealed the optic nerve markedly compressed in the optic foramen. This case I watched. There was general loss of vision, though it never especially involved the center of sight. Nor can we overlook the tremendous pressure exerted on the nerve by the subdural fluid in high grades of choked disk; nevertheless, central scotomata are among the rarest of all visual field-changes in these cases.

Only a comparatively short time ago, in association with Dr. Follis, we opened the orbit of a patient having an acute hydrops of the optic nerve. The fluid was under great tension and the patient had never experienced loss of central vision.

One other point, suggestive but not conclusive, is that the atrophy taking place in the optic nerve of a dog from pressure of a ligature was in direct proportion to the distance from the ligature. I have seen eight of these cases of central scotomas in eclamptic women. The impairment of vision lasted from a few seconds to four days. One woman had sixteen distinct attacks in one day. Now can we conceive such a transitory edema in the tissues of the optic foramen? If we are willing to concede that eclampsia is dependent on a toxin, we shall certainly have a hard time eliminating that organ of the body which shows the most profound reaction to a long list of poisons. Dr. Holden believes the retinal pigment-changes are probably dependent on a toxin; then why absolve the same toxin from the damage to the papillomacular bundle of fibers? Dr. Holden's case impresses me as one of nephritis, probably a nephritis antedating the pregnancy, complicated by the toxin of eclampsia. In 250 cases of paralysis of the sixth nerve analyzed by Koellner, nephritis as a cause stood next to syphilis and traumatism. I have seen several such cases myself. I have, however, never seen a sixth-nerve palsy in eclampsia uncomplicated by nephritis, nor have I been able to find such a case in literature, although I may have overlooked some.

One other interesting symptom is night blindness. Experience leads me to believe that this, too, is but an acute manifestation of the nephritis. To quote from Parsons: "Acute night blindness is associated with defective nutrition, such, for insance, as we find in nephritis. . . ." We must not overlook the fact that the only invariable changes in eclampsia are those of the liver. In many post-mortems no evidence of edema of the brain has been found, and in at least one such case there was central blindness.

Dr. Allen Greenwood, Boston: The lesson to be learned from Dr. Holden's paper and Dr. Randolph's discussion is: early delivery of these patients. One must be careful, however, not to give too grave a prognosis as to sight and the future of the patient if there is massive exudate in the retina. Some years ago I saw a woman, aged 40, pregnant, with a very marked neuroretinitis with a high-grade albuminuria. The eye condition recovered entirely after delivery, leaving little signs of trouble. A subsequent pregnancy brought back the kidney and eye condition with almost blindness at the time of delivery and a subsequent recovery and the patient as yet has not succumbed to any kidney disease. I also saw a case similar to the one Dr. Holden reports in which a woman of 25 had homonymous hemianopsia as an accompaniment of an albuminuric neuroretinitis of pregnancy.

Dr. Ward A. Holden, New York: It seems to me these cases are of a good deal of interest and importance, and careful study of individual cases with the possibility occasionally of a necropsy will certainly clear up some of the questions which now are obscure.

TWO CASES OF ACUTE RETROBULBAR NEURITIS, ASSOCIATED WITH MARKED ACETONURIA*

LEE MASTEN FRANCIS, Ph.B., M.D.
BUFFALO

The two cases of acute retrobulbar neuritis presented in this report are of interest because a thorough physical examination by competent observers revealed no definite findings except the presence of a pronounced reaction for acetone in the urine. Both patients were young, one a girl of 8½ and the other a man of 31. The girl had been an exceptionally healthy child, while the man gave a history of a previous attack of colitis coincident with marked acetonuria. Both lived under ideal hygienic conditions, being members of families in more than comfortable circumstances. In both cases, hysteria, disease of the nose and accessory air-passages, alcohol, tobacco and drugs could be eliminated with certainty, nor were there any grounds on which the likelihood of chemical or ptomain poisoning might be entertained.

While blindness from retrobulbar neuritis occurs in diabetes, as a rule the patients are past middle life, very much broken down, or well advanced in the disease. I have not been able to find cases reported occurring in young persons associated with a decided acetonuria and with no other likely etiologic factor.

Case 1.—A. A., aged 8½, the daughter of well-to-do parents, consulted me Feb. 12, 1910. The family history was good. The child had always been exceptionally well and healthy and had lived under ideal conditions. There was no history of gastric disturbances, no coryza, injuries or illnesses of any sort. No visual disturbances had been observed by patient, parents or teachers, until a few days ago the girl complained that she could not see the blackboard in school and that the print in her books was not clear. At about the same time she complained of dull frontal headaches, and her mother remembers that she was somewhat nauseated when riding on the street-cars.

Examination.—The patient is a well-nourished, healthy appearing girl of normal size and weight, of good color and presence. The pupils are of normal size, equal and respond readily to all reflexes.

O. D. V. = 6/15
O. S. V. = 6/15

Muscles: 1° exophoria with Maddox rod. The fundus examination without mydriasis showed the disks to be of normal appearance, retinal vessels normal. Not suspecting the nature of the case, I ordered a 1 per cent. atropin solution to be instilled three times daily, and the patient was requested to return three days later for refractive examination under cycloplegia.

February 15, the patient returned, the atropin having been used as ordered.

The retinoscope showed:

O. D. + 1.00 cy. ax. 105°
O. S. + 1.00 cy. ax. 75°

Vision (under atropin):

O. D. V. = 6/22.3 + 1
O. S. V. = 6/22.3 + 1

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* Read before the Section on Ophthalmology at the Sixty-Fifth Annual Session of the American Medical Association, Atlantic City, N. J., June, 1914.

A careful test with trial lenses showed that while the cylinders indicated by the retinoscope made the test-letters more distinct, they did not improve her ability to read. A test was then made of her visual fields by means of colored disks on the end of a rod. The fields for white appeared normal, but there was a total lack of recognition of the red disk in the fields of fixation. The blue field appeared normal; green and yellow were not tested.

The eyeballs were not tender on pressure. The fundus examination revealed no change in the appearance of the nerve-head or retinal vessels.

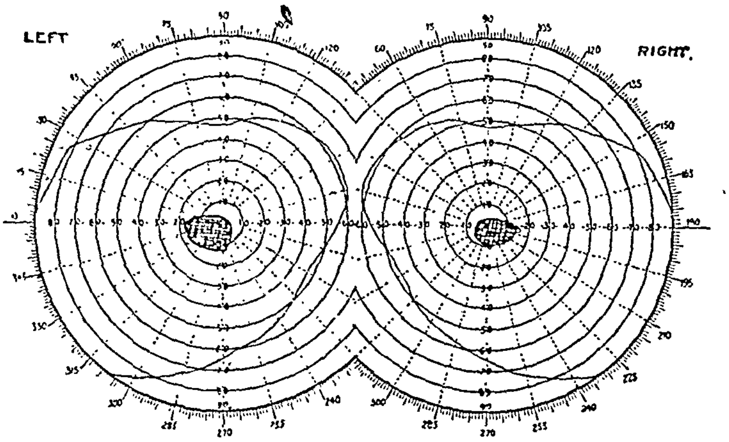

Fig. 1.—Absolute scotoma for red, white and blue fields normal.

The patient was then referred to Dr. F. W. Hinkel for examination of the nose and air-passages and to Dr. N. G. Russell for a thorough physical examination.

The examination of the nose and air-passages was reported as absolutely negative.

Dr. Russell's report is as follows: I have examined A. A. carefully and have found her normal in every way except possibly somewhat nervous. The blood is fully up to standard except that hemoglobin is a little low. The urine is perfectly normal except a decided reaction for acetone and a slight reaction for diacetic acid. This is rather unusual in a full diet such as she has been on.

Feb. 21, 1910, the patient returned to me, the effects of the atropin having thoroughly passed away. At that time:

O. D. V. = 6/12 + 1
O. S. V. = 6/12 + 2

Plus cylinders, while improving the above letters do not add to capacity to read smaller letters. The fields were then charted on the perimeter (Fig. 1.).

A urinalysis made by Dr. Russell, February 25, showed a mild acetone reaction but no diacetic acid. Having been under a regulated diet, ordered by Dr. Russell, the patient returned to me, April 25, 1910, at which time O. D. V. = 6/6, and O. S. V. = 6/6. The urine has been free from acetone about two weeks. A test with a red disk showed no color defects. The patient again came under my observation in December, 1910, when she was brought to me complaining of asthenopia and headache dependent on eye use. Her visual tests at that time were as follows:

O. D. V. = 6/9 — Exophoria 1½, fields negative.
O. S. V. = 6/9 + Fundus negative.

These lenses were ordered and worn during school hours and for near use with a complete relief of the symptoms.

May 28, 1913, the patient again returned, saying that the lenses had *not* been worn during the past year. For the past two weeks her headaches and asthenopia had returned. Visual examination revealed:

O. D. V. = 6/9 — Exophoria 1½, fields negative.
O. S. V. = 6/9 + Fundus negative.

Under *atropin*:

O. D. V. = 6/75 — 0.25 sp. = + 0.50 cy. ax. 90° V. = 6/5
O. S. V. = 6/6 + 0.50 cy. ax. 75° V. = 6/5

A full correction was ordered for school use, which has been worn with comfort.

Case 2.—*History.*—A. G., aged 31, married, department manager of a business firm, consulted me, Jan. 22, 1911. Family history is without incident. He uses neither tobacco nor alcohol, denies venereal disease and describes himself as of "nervous disposition" and as having a "sensitive stomach" and "somewhat run down" from overwork. He says that for many years he has had occasional attacks of what he describes as "intestinal catarrh," for which his physician has prescribed exercise and diet, with relief of symptoms. He has worn lenses for many years, having been examined by Dr. Julius Pohlman of Buffalo. He is wearing:

O. D. + 0.75 sp. = — 2.00 cy. ax. 180°
O. S. + 0.50 sp. = — 1.00 cy. ax. 180°

The glasses have always been comfortable and have given him good vision.

Present History.—He has been in his usual good health so far as he knows, except that he remembers having had a slight attack of indigestion a few days ago which he ascribes to a corned-beef sandwich which he ate at noon. January 19, he noticed that the vision of his left eye was blurred and the sight noticeably impaired. The vision has remained about the same as at first, so far as he can determine. There have been no headaches or dizziness or "colds in the head." His work is not that which would expose him to any poisons in its performance, and he has been taking no medicines of any kind.

Examination.—The patient is somewhat pale, is fairly well nourished and of apparently high-strung disposition. Pupils are of normal size and equal, and respond readily to light, convergence and consensually. There is no tenderness on firm pressure on the globes.

O. D. V. (tested with his lenses) = 6/6
O. S. V. (tested with his lenses) = 6/15

Muscles: 2° exophoria (Maddox rod).

The ophthalmoscopic examination shows the disks to be sharply outlined, of normal color and appearance. The retinal veins and arteries are normal. The circulatory balance is good. There are no abnormal appearances to be noted.

The fields were then tested by means of disks on a rod. While the visual field of the right eye appeared normal for white, blue and red, on the left side white and blue were normal. The patient fails to recognize the red disk in the center of the field. The perimetric chart was then made (Fig. 2).

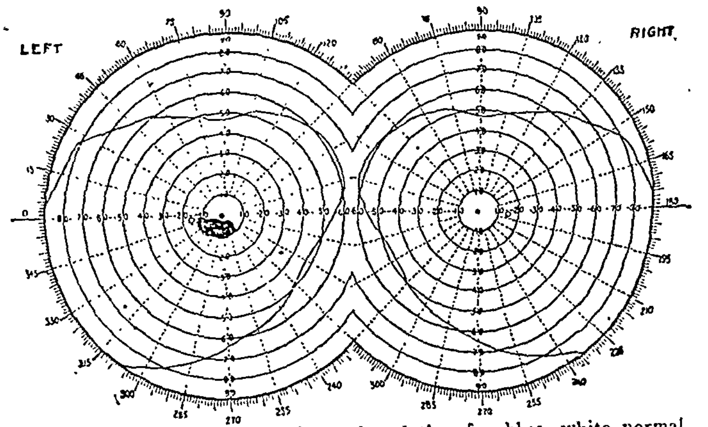

Fig. 2.—Absolute scotoma for red, relative for blue, white normal.

A diagnosis of left retrobulbar neuritis was made. Dr W. Scott Renner, Buffalo, who made the rhinologic examination, reported that the nose and sinuses were free from disease. Dr. Herbert M. Hill reported a twenty-four-hour sample of urine negative, both chemically and microscopically, but no test for acetone was made. A competent internist, to whom the patient was referred in the temporary absence of his regular medical adviser, reported to me within a few days that he had been unable to discover evidences of hysteria or anything abnormal about the patient. The differential blood-count was negative. Hemoglobin estimate was 75 per cent. At my suggestion the patient was given small doses of calomel, sodium salicylate and sweat-baths. The following days were without incident, beyond the fact that the patient was very apprehensive concerning his condition and became very nervous. I suggested a rest and change of scene. The patient decided that he wanted to go to Lakewood, N. J., so I gave him a letter to Dr. Arnold Knapp of New York, instructing him to consult him during his absence. A few hours before leaving for Lakewood, however, his regular physician, Dr. John Mesmer, having returned to the city, I suggested that he submit a sample of urine to him, and seek his advice.

Within a few days Dr. Mesmer reported to me that the examination of the single sample of urine submitted to him had shown "a very heavy acetone reaction." He also reported that the patient in past years had had several severe attacks of "mucous colitis with crises" and in each instance there had been decided acetone reactions. Each attack had yielded readily to a proper diet and outdoor life with plenty of exercise. During the intervals between the attacks the urine had been free from acetone bodies. Dr. Mesmer had advised the patient to return to his dietary regulations, and to take plenty of exercise during his sojourn at Lakewood.

Following are the clinical records of the case tested with lenses:

Feb. 16, 1911: O. S. V. = 6/7.5 + 3 Scotoma for red tested roughly appears smaller.
Feb. 27, 1911: O. S. V. = 6/6 — 3 Urine is free from acetone.
Mar. 29, 1911: O. S. V. = 6/.6 + 2
Apr. 22, 1911: O. S. V. = 6/6 + 2 No scotoma for red.

April 22, 1911, the patient's refraction was gone over under homatropin with the following result:

O. D.—0.62 sp. = + 2.25 cy. ax. 90° V = 6/5
O. S. + 0.62 cy. ax. 90° V = 6/5

The urine gives no acetone reaction. During the past three years the patient has been seen at frequent intervals. During this time visual acuity has remained the same. There have been no attacks of lowered vision in the right eye.

According to von Noorden,[1] "the primary acetone bodies are beta-oxybutyric acid and aceto acid, from which acetone is probably derived as a secondary product . . . by far the most important sources of acetone are the lower fatty acids." Whatever be the source or whether the virulence of the toxin in cases of faulty metabolism be acetone or some antecedent product or products, clinicians recognize that the excretion of acetone is a fair index of a toxemia. While acetonuria is not at all infrequent in children, and to a less extent in adults with gastro-intestinal disturbances, and invariably accompanies starvation, it may be fairly stated that acetone is not found in appreciable quantities in the urine of normal persons, and that its presence is an index of some toxemia of enough virulence to attack nervous tissue.

While it is quite obvious that acetone, beta-oxybutyric acid or aceto-acetic acid exercise no decided selective action on the papillomacular bundle of the optic nerve, yet it appears reasonable that in certain cases it may produce a retrobulbar neuritis, and that these factors should be taken into consideration in the search for possible etiologic factors in cases of retrobulbar neuritis of otherwise obscure origin.

575 Delaware Avenue.

ABSTRACT OF DISCUSSION

Dr. G. E. De Schweinitz, Philadelphia: It would seem to me, in agreement with Dr. Richard's observation, that acetonuria in cases such as Dr. Francis has reported, must be regarded as an accompanying symptom, without direct etiologic relationship to the blindness, and this, I take it, is Dr. Francis's own view.

With regard to the classification of these types of central amblyopia: Certainly the symptoms in no way correspond to those of acute retrobulbar neuritis of the classical type, that is to say, obscuration of vision, beginning always in the center of the visual field and rapidly progressing in from one to eight days to complete or nearly complete blindness; at first, negative ophthalmoscopic appearances, later, blurring of the margins of the disk, hyperemia of its surface, and sometimes, in severe cases, diminished caliber of the retinal arteries and fulness and pulsation of the retinal veins; distinct pain on movement of the eyeball or when the globe is pressed backward into the orbit. If such a condition of affairs as Dr. Francis has described is to be regarded as an expression of retrobulbar neuritis, then it must belong to the so-called attenuated types, but even in these types the scotoma includes the fixing-point, although the depreciation of vision is not nearly so great as in the acute or fulminating varieties, and the subsidence of the amblyopia is always much more prompt.

While Dr. Francis' careful examination and observations have excluded hysteria or any other pronounced psychosis, it does not seem to me impossible that scotomas of this character may represent and interpret fatigue of the macular region; indeed, it is well known that temporary central scotomas may have such an interpretation. Usually they exist as small central color scotomas, best detected with a 1 mm. red or green object, and not infrequently the patients have been the subjects of long-standing eye-strain. The peripheral field may be normal, or repeated investigations will sometimes elaborate one of the various fatigue contractions. Sometimes these central scotomas closely simulate the variety produced by toxic amblyopia.

Finally, as has also been suggested by Mr. Gunn, some of the slighter forms of so-called retrobulbar neuritis may depend on an edema which is analogous to the acute swelling of the eyelids, with headaches, occasionally encountered as the result of errors in diet or of intestinal auto-intoxication. It is perfectly conceivable that an edema may arise in the optic nerve which would bring about a condition of elevated pressure in the optic fibers, especially in the neighborhood of the optic foramen. It will be the duty of all of us to see that careful urine examination is made in all forms of central amblyopia, whether they belong to the functional varieties or not, but I suspect, to repeat a former sentence, that the acetone may indicate that some form of toxemia is the responsible agent, which in one instance might produce a fugitive edema of the eyelids, and in another a fugitive edema of the optic nerve-fibers. Indeed, as we all know, one observer is of the opinion that the functional central scotomas, the so-called hysteric manifestations, depend on edemas in the neighborhood of the optic chiasm, analogous to the edemas which this psychosis can call into existence elsewhere in the body.

Dr. Wendel Reber, Philadelphia: About six years ago a young woman, aged 33, came under my observation, a case which I reported before the American Academy of Ophthalmology. Tobacco as a factor could be easily excluded. This has been a complicating factor in many cases of central scotoma in cases in which diabetes was excluded. The patient was neurasthenic, corresponding somewhat to the type to which Dr. de Schweinitz alluded, in that she viciously overworked her accommodative apparatus. She had a central scotoma involving the fixation point. At times sugar appeared abundant in the urine, ranging from 0.5 to 1.5 *per cent.* for the six years. At times she will show a low acetone reaction; at other times she will be entirely free of it. Her vision at no time has fallen below 6/10. Once it rose to 6/7½. She has continued at her occupation as a secretary. At no time that I have examined her during the six years has she been free from her central scotoma. It is practically the size of the blind spots in Dr. Francis' first case. The case has been one of great interest to me because of the persistence of the scotoma. I have taken the fields at least twenty times. They remain about the same. Accessory-sinus disease was excluded by repeated examination, skiagraphically and otherwise. I saw the patient about three weeks ago. She has vision still about 6/9, the same scotomata, and about four weeks ago showed some acetone. At the last visit she showed none. The question in the case is the exact cause of this low-grade toxemia.

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[1] Von Noorden: New Aspects of Diabetes, E. B. Treat & Co., New York, 1913, p. 127.

Dr. Lee Masten Francis, Buffalo: I want to emphasize the fact that the only thing we could find in these cases was the presence of acetone. Whether it or some parent body was the cause of the lowered vision, or whether it was a psychosis, I am sure I do not know. I thought at first it might be on a hysterical basis, possibly, especially in one case, but careful study by competent observers failed to reveal corroborative evidences of hysteria. I simply report the cases for what they are. Acetonuria was the only finding we could determine in both instances.

A METHOD OF CLOSING PERFORATIONS OF THE SEPTUM OF THE NOSE

W. LIKELY SIMPSON, M.D.
MEMPHIS, TENN.

During the last two or three years, I have adopted the method of inserting a piece of cartilage or bone between the flaps of the mucous membrane after the submucous operation is made in cases in which it seemed to me that there might be a permanent perforation due to a tear in the mucous membrane on both sides of the septum. It occurred to me that in those cases in which there is a perforation of the septum that is not too large, a submucous operation with a transplantation of cartilage or bone or both to that part of the nose in which there is a perforation, together with the arranging and sewing of the flaps, could be carried out with good results. I have adopted this procedure in a few cases with very gratifying results. This cartilage or bone gives a support and a place for attachment for the flap of mucous membrane and this does away with retraction which is so liable to occur without some support. Before I tried this procedure my results in closure of perforations of the septum were almost invariably bad.

It seems to me that the primary incision should be at the anterior end of the cartilage of the septum so that as large a flap as possible anterior to the perforation can be obtained. Instead of cutting through the cartilage when beginning the elevation of the mucous membrane on the opposite side to the incision, it is better to begin the elevation just at the anterior end of the cartilage. One should be as careful as possible in elevating the mucous membrane around the edges of the perforation, as it is only with the greatest care that tears in the mucous membrane are prevented.

After the elevation of the mucous membrane is completed, the cartilage or bone, both anterior and posterior to the perforation, are resected and placed in a normal saline solution. As a general rule the large piece for transplanting would be taken posteriorly to the perforation. The larger the piece the better. If one thinks that a large suitable piece of cartilage or bone will be difficult or impossible to obtain, it is a good plan to transplant from another deflected septum on which a submucous operation is being made. If one uses such a method as Hazletine's, the anterior flap which is to be displaced posteriorly should be on the side of the primary incision, and the flap to be brought forward would be on the opposite side. Of course, the edges of the perforation should be pared. After the flaps have been arranged, the largest possible piece of cartilage or bone should be placed between the flaps, and the stitches applied. One may find it better at times to insert the transplant before cutting and arranging the flaps.

After the stitches are applied, the packing of both sides of the nose is done with more care than is usually necessary after an ordinary submucous operation. The packing should be kept in two or three days. After the packing is left off a small amount of cotton may be applied over the flaps to keep them from being dried. Ointments also may be used with advantage to prevent drying of the flaps. Some variation at times in making the incision, flaps, etc., would be necessary, depending on the position, size, etc., of the perforation, but the all-important thing is to get a large piece of cartilage or bone or both anterior or posterior to the perforation and transplant this segment so that this whole area is filled in by the transplanted cartilage or bone; if possible, this transplant should be covered with mucous membrane on both sides. If only partially covered, of course, this transplant will become covered with granulations and later by epithelium and a good final result obtained; but of course this would prolong the after-treatments.

I present this procedure, thinking that it might be of assistance to some one in this obstinate class of cases.

930 Exchange Building.

SUPPOSED POISONOUS PROPERTIES OF CHESTNUTS GROWN ON TREES AFFECTED WITH CHESTNUT BLIGHT

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In October, 1913, there were a large number of newspaper reports that chestnuts collected from trees affected with the blight had poisonous properties and were producing cases of disease and death. These cases were reported from the vicinity of Hartford, Conn., from both western and eastern Massachusetts, and one case each from New Hampshire and New Jersey. One news item was to the effect that in Framingham, Westboro and the surrounding towns of eastern Massachusetts there was an epidemic resulting from eating these chestnuts. A report from western Massachusetts stated that gray squirrels were dying, presumably from eating chestnuts from these blighted trees.

The matter was deemed of sufficient importance for at least a preliminary investigation, and Dr. T. C. Merrill, Assistant Forest Pathologist, was detailed to make an examination of the cases reported from Hartford and vicinity. Inasmuch as his report was not conclusive, I, accompanied by Dr. Merrill, made a careful examination of the reported cases in Massachusetts and New Hampshire. It was found that the cases in western Massachusetts were reduced to two. A conference with the attending physician in these cases made it clear that in one instance the illness was not connected in any way with chestnuts, and, in the opinion of the physician, there was no evidence that the illness in the second case was caused by chestnuts, although the patient had been eating nuts which came from an area in which some of the trees were affected with blight.

The story that gray squirrels were dying from this cause was found to be based on the fact that a game-warden had found two dead squirrels which had apparently perished from disease, as there were no shot marks on them. The publicity which had been given to the subject had caused something of a local scare, and the schoolteachers had instructed the children to eat no chestnuts, the result being that no chestnuts were on the markets, and the dealers had been obliged to throw away their stock of nuts.

In eastern Massachusetts, an examination of the reported cases and conferences with physicians and health officers brought out the fact that there was not a single case of illness that could be attributed to the eating of chestnuts either from healthy or from blighted trees.

Only one case had been reported from New Hampshire, and this was found to be a case of severe illness following the ingestion of a considerable number of chestnuts, but the tree from which these nuts had been gathered appeared to be entirely healthy. A careful examination by Dr. Merrill brought out no evidence of the presence of blight. It is true, however, that the tree is located in a region in which the blight exists, and as it is sometimes difficult to detect the disease, it cannot be stated positively that the tree was entirely healthy. The attending physician very kindly gave a detailed account of the case, in which the symptoms had been decidedly puzzling, but he himself was not ready to diagnose the trouble as due to chestnut poisoning.

RESULTS OF FIELD EXAMINATION

Dr. Merrill,[1] as already reported in The Journal, tabulated the symptoms observed in the cases. A careful examination of the detailed report of these twenty-one cases, as tabulated by Dr. Merrill, shows that only one case could definitely be connected with the eating of chestnuts from a blighted tree. This was the fatal case, numbered 3 by Dr. Merrill, and in this case there was no clear evidence that the disease was caused by the chestnuts. In only one of the other cases, the New Hampshire case, numbered 21 in Dr. Merrill's table, was there a definite connection between the eating of chestnuts and the illness, and in this case the chestnuts were from an apparently healthy tree.

It is well known that raw chestnuts are not very digestible (Saiki,[2] Merrill,[3] Jaffa[4]). It is also well known, at least in New England, that many persons have an idiosyncrasy which makes the eating of any considerable number of raw chestnuts harmful. It is well known that children, eating too many of these nuts, frequently are affected with sore mouths and with skin eruptions, and most of the described details of the symptoms of the cases investigated can be explained on the basis of an idiosyncrasy of this kind. This is so evident that it seems unnecessary to go into a detailed discussion of the symptoms in these cases.

The final result of the field examination, then, made it clear that there was no evidence whatever that nuts from trees affected with the chestnut-bark disease produce illness.

LABORATORY EXPERIMENTS

In order, however, to make this conclusion more certain, it was thought best to carry on some detailed experiments in the laboratory. Chestnuts were obtained from areas affected by the chestnut blight, and as many as possible were collected from the trees which were supposed to be associated with the cases of illness. The material collected was fed to white rats, rabbits and a monkey. A considerable quantity of the material collected from one of the trees which was supposed to be connected with one of the fatal cases in Connecticut was fed to the monkey, which ate it greedily.

All these feeding experiments were negative. Inasmuch as no results were obtained, it does not seem at all necessary to go into the details of the feeding experiments, which were carried on in the laboratory of the Office of Poisonous Plants by Mr. A. B. Clawson, physiologist. Mr. O. F. Black, chemical biologist, made some extracts of chestnuts collected from a Connecticut area infested with the chestnut blight, and these were administered to mice in the form of hypodermic injections, with no result. Mr. Black also made a chemical examination of the nuts with reference to the presence of any toxic principles and found none.

SUMMARY

1. An examination of the reported cases of poisoning from eating chestnuts collected from trees affected with the chestnut blight showed that there was no evidence that nuts from blighted trees contain any more deleterious properties than those from healthy trees, and the symptoms which had been supposed to be connected with blighted chestnuts could in almost all cases be explained as symptoms which would be produced by healthy chestnuts in some persons.

2. Laboratory experiments in feeding the whole fruit, in the use of extracts and in chemical examinations failed to show any toxic properties in the nuts.

3. While the results of the investigations were negative, it is believed that the study was sufficiently thorough and comprehensive to show that there is no ground whatever, either in the experience of the physicians or in the results of laboratory tests, to think that nuts from trees affected with the chestnut blight disease are any more injurious than those from healthy trees.

Bureau of Plant Industry.

Permeability of the Intestines in New-Born and Sick Infants

Lawatschek reports experiments (*Prager med. Wchnschr.*, 1914, xxxix, 185) at Prague on the absorbing power of the intestines in young infants. He found that albumin was absorbed through the gastro-intestinal tract so readily that it was speedily found in the urine in infants up to 10 days old and in infants with severe gastro-intestinal derangement at any age. The intestines normally seem to become less permeable with every day after birth, but the albuminuria—testifying to the abnormal absorbing power of the intestines—was manifest up to the tenth day of life, at which time the infants left the hospital. He examined thirty-eight new-born infants and forty-six sick infants, feeding them at one meal with half the beaten white of an egg, undiluted. The liquid part is readily taken but the infants do not swallow the froth, so that the amounts actually ingested are liable to be irregular. All the healthy new-born infants and also the older infants who were sick gave the positive reaction in the urine. The absorbing capacity seemed to parallel the severity of the gastro-intestinal derangement.

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[1] Merrill, T. C.: Is there a Toxemia Referable to the Eating of Chestnuts? The Journal A. M. A., Jan. 24, 1914, p. 289.

[2] Saiki, T.: The Digestibility and Utilization of Some Polysaccharide Carbohydrates Derived from Lichens and Marine Algae, Jour. Biol. Chem., 1907, ii, 251.

[3] Merrill, L. H.: Digestion Experiments with Chestnuts, Bull. 131, Maine Agric. Exper. Station, 1906, p. 146.

[4] Jaffa, M. E.: Nuts and their Uses as Food, Farmers' Bulletin 332, U. S. Dept. Agric., 1910.

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SATURDAY, JULY 4, 1914

THE FUNCTIONS OF THE CORPUS LUTEUM

The histologic features of the corpus luteum — the temporary tissue produced in the ovary as the result of the discharge of an ovum — suggest that it has a glandular character. In the fully formed structure the lutein cells strongly resemble the cells of an ordinary gland in a state of secretory activity and are epithelioid in origin and character. Furthermore, the whole mass has a very efficient blood-supply. It is not surprising, therefore, that the hypothesis of an internal secretion, in the sense in which this term is applied to what are called the ductless glands, was postulated long ago for the corpus luteum.[1] Direct chemical analysis has, as yet, furnished no conclusive evidence concerning this theory. The study of the occurrence or failure of certain physiologic functions and morphologic changes in special parts of the organism relative to the presence or absence of corpora lutea, however, has given a more substantial basis for suggestive hypotheses. The older ones, now regarded as untenable, may be dismissed without more than passing reference.[2] It was once believed, for example, that the corpus luteum "forms a plug of tissue to fill up the cavity of the ruptured follicle and so compensate for the disturbance in the circulatory system caused by the rupture." Another theory held that the purpose of the corpus luteum was to suppress ovulation during pregnancy. As a matter of fact there are animals which ovulate shortly after parturition, although the corpus luteum has not yet disappeared. Leo Loeb, who has devoted much study to this gland, believes that the corpus luteum secretes a substance which inhibits the maturation and rupture of new follicles. In discussing this, O'Donoghue concludes that, although the presence of a corpus luteum tends to retard ovulation, it cannot be asserted at present that this is its main function.

Far more convincing is the evidence that the presence of a corpus luteum is essential to the uterine changes connected with the implantation of the ovum and its maintenance during the early stages of pregnancy.[3] Under the influence of the corpus luteum the uterine mucosa becomes so sensitized that it will form the maternal part of the placenta in response to a certain stimulus which is normally provided by the fertilized ovum, but which may be replaced by a mechanical one. Portions of the uterus transplanted to the subcutaneous tissue also produced deciduomata if transplantation was carried out from five to seven days after ovulation, when the corpus luteum has developed. If, when the uterine tissues were transplanted, the ovaries were also extirpated, it was found that the response was not nearly so marked as if the transplantation alone had been effected and the ovaries not interfered with. These transplantation experiments appear to exclude the possibility that the nature of the stimulation is nervous; and the fact that it is cumulative, even when the uterus is removed to another part of the body, suggests that the stimulus is a chemical one carried by the blood. We see here an example of a highly useful adaptation, most important for the propagation of the species, based on biochemical correlation between different organs.

Of the factors concerned in the development of the maternal placenta the sensitizing substance furnished by the corpus luteum seems to show the highest degree of specificity. The mechanical factor which is involved in the insertion of the ovum can apparently be imitated in a variety of ways, so that the beginnings of placental changes may be initiated even when the ovum is excluded from entrance. The substance which sensitizes appears, according to Loeb, to have a specific affinity for uterine tissue in some, if not in all, species. For this reason extra-uterine, tubal or abdominal pregnancies are impossible in the guinea-pig, for example. In man, in whom these are occasionally found, the specificity in the fixation of the corpus luteum substance may be regarded as less marked.

Not less striking than the foregoing interactions associated with the early changes in pregnancy are the recent hypotheses regarding the relation existing between the corpus luteum and the mammary glands. Certain facts in this connection are commonly accepted. It is known that the removal of both ovaries before puberty prevents its onset with the accompanying growth of the mammary glands. It is further recognized that there may be a growth of these glands at each estrual period. Obviously, hypertrophy of the mammary glands might be due to the liberated ovum or its subsequent development or to some purely uterine factor. That there is, however, really a functional correlation between the growth of the corpora lutea and the mammary glands is shown by the fact that a growth of the latter follows when the corpora lutea are produced in animals either by artificial rupture of the follicle or by copulation with a male previously rendered sterile. According to Hammond and Marshall,[4] the mammary hypertrophy can take place in animals from which the uterus has been removed while still immature, thus showing that the uterus is not essential to the development of the organ of lactation. The development of the corpora lutea of pseudopregnancy is further correlated with uterine hypertrophy and hyperemia followed by extravasation of blood. These changes are clearly comparable with those that occur in true pregnancy, and afford a further confirmation of the view that the corpora lutea are a necessary factor in causing and maintaining the raised nutrition of the uterus during the first part of the period of gestation. Recent studies have indeed thrown a flood of light on the function of what was regarded not long ago as an obscure and insignificant vestige of ruptured graafian follicles.

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[1] Prenant: La valeur morphologique du corps jaune, etc., Rev. gén. d. sc. pures et appliquées, 1898.

[2] A recent popular review of the subject is furnished by O'Donoghue, C. H.: The Corpus Luteum; Its Structure and Function, Sc. Progr., 1914, viii, 721.

[3] Loeb, Leo: The Experimental Production of the Maternal Placenta and the Function of the Corpus Luteum, The Journal A. M. A., Oct. 30, 1909, p. 1471.

FURTHER DEVELOPMENTS IN THE INVESTIGATION OF THE CHEMOTHERAPY OF CANCER

The excitement that followed Wassermann's publication concerning the healing of mice with inoculated cancers by means of a compound of eosin and selenium is probably well remembered.[5] The great caution he used, in presenting this report, to limit its application to the particular experimental tumors with which he had worked, is perhaps not so generally recalled. Wassermann is too experienced an investigator not to know the dangers of over-rapid generalization from an isolated fact, and he foresaw the immediate furor that would arise concerning the new "cancer cure"; hence he carefully and specifically stated that his results had been obtained with mouse tumors only, and that no clinical application of them had been made. The wisdom of his conservatism has been shown by subsequent events. Not only has no remedy for human cancer yet been produced through this development of Ehrlich's principle of specific chemotherapy, but even its being really a specific curative agent for mouse cancer has recently been made doubtful through the work of Keysser, who was one of Wassermann's collaborators in the original publications. This, by the way, is a good illustration of the fact that real scientists do not hesitate to bring forth evidence against their own work when they can find it.

Keysser's new observations[6] are based on new methods of experimentation, whereby inoculations are made into various viscera instead of subcutaneously as has previously been the almost universal method. The importance of this lies in the fact that the inoculated tumors when growing in the subcutaneous tissues have little tendency to infiltrate, and with many strains do not often produce metastases. In these respects they resemble benign tumors rather than carcinoma. The lack of infiltrative tendency seems to depend, at least in part, on the looseness of the subcutaneous tissues of the mouse, which permits the formation of large growths without the development of sufficient pressure to force the tumors to grow by infiltration rather than by expansion. When the same tumors are inoculated into the muscles or viscera they assume a typically infiltrative character, and are more prone to produce extensive metastases. After developing a technic that permitted of inoculation into the viscera with a large percentage of takes, Keysser investigated the action on such visceral tumors of various drugs that had been found effective in curing subcutaneous tumors. The results were entirely negative, not only with Wassermann's selenium-eosin compound, but also with Neuberg's copper-glycocoll salt and various selenium-vanadium preparations, all of which produce retrogression regularly in subcutaneous tumors of the same strains. Not only were these agents ineffective in destroying the tumors, but also the eosin compounds, which were found to accumulate specifically in the subcutaneous tumors, did not stain the visceral tumors more than they did the normal tissues, and showed no evidence of specific affinity by either accumulation or retention. While subcutaneous tumors under this treatment show a liquefactive necrosis, followed by healing, the visceral tumors of treated mice showed no such softening, and grew and caused metastases and death just as did the tumors in control animals that received no treatment. The same negative results were obtained with tumors in many different organs, and with different strains and types of inoculable mouse tumors, including both carcinoma and sarcoma.

The explanation of this difference of effect of chemotherapeutic agents on subcutaneous and visceral tumors, as arrived at by Keysser, is both interesting and significant. He observed that while these drugs destroyed tumors that had reached some size, they do not prevent the development of tumors from a fresh inoculation made just before treatment was begun; also they do not readily kill tumor cells mixed with the drugs *in vitro*. Hence it seems that, despite their ability to destroy tumors of size, the drugs in question can scarcely be considered specific curative agents for mouse cancer, since they cannot prevent fresh inoculations from taking root and growing just as fast as they do in untreated animals. Their destructive effect on the larger tumors is ascribed by Keysser to the fact that when the effects of treatment are being studied the tumors are subjected repeatedly to palpation, which causes hemorrhage and necrosis in the tumors, and the drugs found effective in causing softening and disintegration owe this to their ability to stimulate autolysis, whereby they cause rapid softening to take place in the necrosed tumor tissue. Furthermore, areas of necrosis and hemorrhagic extravasations are sites wherein many foreign chemicals tend to accumulate, a fact which accounts for the apparent specific affinity of the eosin compounds for the tumor tissue. It is because the visceral tumors are not subject to equal manipulation and trauma that they do not undergo corresponding softening and retrogression under the influence of the drugs. As proof of this, Keysser found that if he treated mice with subcutaneous tumors with the usual doses of eosin-selinate, but carefully refrained from palpating and manipulating the tumors, they did not retrogress under the treatment but grew like the controls. The healing of mouse tumors thus far obtained by chemotherapeutic methods resolves itself, therefore, into the production of hemorrhage and necrosis through mechanical means, and an augmentation of autolysis by the drug. If no injury is produced in the tumor, the drug of itself has no effect in modifying the growth of the tumor.

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[4] Hammond, J., and Marshall, F. H. A.: The Functional Correlation Between the Ovaries, Uterus and Mammary Glands in the Rabbit, with Observations on the Oestrous Cycle, Proc. Roy. Soc. London (B) 1914, lxxxvii, 422.

[5] The Application of Chemotherapy to Cancer, editorial, THE JOURNAL A. M. A., Jan. 13, 1912, p. 120.

[6] Keysser, F.: Zur Chemotherapie subkutaner und in Organen infiltrierend wachsender Mäusetumoren, Ztschr., Chemotherap., Orig., 1914, ii, 183.

All this does not signify, by any means, that no progress has been made—merely that we are not so near the goal as we had hoped. These observations have increased greatly our knowledge of the growth and behavior of tumors under certain influences, have developed new and valuable methods of investigation, and have pointed out other possible routes along which progress may be made. Also, they teach emphatically the necessity for scientific conservatism, especially when we are contemplating so exciting a subject as the treatment of cancer.

THE THYROID AND THYMUS IN RELATION TO DEVELOPMENT

In speaking of growth or development those who do not give close attention to the problems involved in this phenomenon usually emphasize primarily the increase in size or weight which familiarly characterize it. The growth of the organism as a whole, particularly at an early period, is accompanied by another feature, that of differentiation. The changes in form and weight do not consist merely of additions to the tissue elements already laid down, but frequently also include those alterations whereby new types of structure are added to or evolved out of the primitive ones originally present.

The striking experiments of Dr. Gudernatsch[1] of the Department of Anatomy at Cornell University Medical College in New York lend a peculiar emphasis to the fact that in development we may deal with two entirely separate factors, one of growth and one of differentiation. This was brought out by feeding to developing tadpoles certain mammalian glands with so-called internal secretion. The results, which have now been abundantly verified, leave no doubt that the thyroid gland contains something which, when the gland is given as food, calls forth a rapid differentiation in a developing vertebrate organism. This may be brought about at any stage of development before maturity is reached. The differentiation may therefore be highly precocious if the treatment is begun on extremely young animals. For example, tadpoles could actually be brought to the point of metamorphosis within eighteen days after hatching, while normally they would require ten or twelve weeks to reach such a stage. The results of this premature metamorphosis are perfect frogs of minute size—pygmy frogs. The thyroid influence is very decided and no tadpole given a thyroid diet escapes from it. Each individual, even if thousands be employed, as was the case in several experiments, will react almost immediately to the thyroid stimulus, so that certain changes in its structure may be observed twenty-four hours after a single feeding of thyroid. Although the time of reaction and the nature of the response vary somewhat with the character of the previous or simultaneous food-supply, there appears to be no complete counteraction against the thyroid stimulus, so that sooner or later any tadpole, receiving thyroid after or mixed with other diets, must respond to its influence.

If thyroid is given to these differentiating animals too rapidly, they usually die very soon after the appearance of their fore limbs and the reduction of their tails; but if they are fed carefully they may be kept alive for several weeks. They will not undergo any further changes except perhaps a continued reduction of their tails, nor will they ever feed again after this differentiation. During this period of excited differentiation, curiously enough, the animals fail to grow. Though the thyroid induces differentiation to a degree not common to other foods, there is no evidence that it possesses any power to prevent growth to the morphologic changes. The suppression of growth may merely be incidental, for rapid differentiation does not allow growth.

The thymus, on the other hand, has the power to stimulate growth, but lacks that of exciting differentiation. Tadpoles feeding on any food (except thyroid) reach a maximum size, and thereupon differentiation begins independently. Thymus-fed tadpoles experience a rapid growth, but fail to be brought to metamorphosis within the usual period. They are slow to develop their hind limbs, even though they grow in size beyond the normal. The thymus therefore possesses a quality that suppresses differentiation in a way not exemplified by any other food used.

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[1] Gudernatsch, J. F.: Feeding Experiments on Tadpoles I, Arch. f. Entwcklngsmechn. d. Organ., 1912, xxxv, 457; II. A Further Contribution to the Knowledge of Organs with Internal Secretion, Am. Jour. Anat.. 1914. xv. 431.

Whether or not other glands share in any degree the accelerating or the depressing power so conspicuously shown by those already described at length, cannot at present be positively answered. The pronounced effects produced in developing organisms by the thyroid and thymus, respectively, at once suggest inquiries of the most diverse character regarding the possible rôle of these organs in the development of the human individual. For the moment we must remain content to record these exceptional experiences which show how specifically our food factors may be related to developmental processes.

THE PATHOLOGIC ACCUMULATION OF BETA-OXYBUTYRIC ACID IN THE BODY

In the intimate study of the phenomena involved in the perversions of metabolism manifesting themselves in ketonuria, attention has been centered primarily in the estimation of acetone either in the excreta or in the organism itself. The analytic problems involved in the accurate measurement of this compound are less difficult and the methods less tedious than those pertaining to the other so-called "acetone bodies," as this group is sometimes collectively called. Yet there can be little doubt that the key to the situation is really to be found in the presence or production of beta-oxybutyric acid which in good measure governs the subsequent appearance of acetone and diacetic acid. In the development of ketonuria, acetone is the first of the three related compounds to appear. When from 0.4 to 0.5 gm. of acetone is present in the day's urine diacetic acid may be found; but beta-oxybutyric acid does not usually become evident until the amount of acetone exceeds 1 gm. After this the chief increase is in the beta-oxybutyric acid, which often amounts to from 30 to 80 gm., whereas the diacetic acid and acetone rarely exceed from 7 to 8 gm.

The presence of considerable amounts of the "acetone bodies" in the urine foreshadows an impending coma and is a familiar symptom in the severer forms of diabetes. It is therefore a matter of no small moment to know where and to what extent these harmful products may accumulate in the body. Beta-oxybutyric acid has been reported to occur in the blood and various organs of patients dying in diabetic coma, figures as high as 0.4 per cent. being reported for the blood. With improved methods of analysis Sassa[1] has observed that the blood and organs of man and various animals in health normally yield traces of beta-oxybutyric acid. The distribution of the compound throughout the parts of the body is fairly uniform and the content in the organs is expressed by quantities of the magnitude of from 0.01 to 0.02 per cent. In experimental diabetic conditions there may be a decided increase in the amounts found in the tissues; yet the proportions retained in the body at any moment are at best small in comparison with those eliminated by the kidneys in the urine. On the other hand, the organs obtained from a patient who died in diabetic coma showed a decidedly increased accumulation of beta-oxybutyric acid in the organism, amounting to eight times the usual "normal" figures. The liver was found to be particularly rich in the acid.

It does not follow from this, however, that the liver necessarily is the seat of formation of the beta-oxybutyric acid; for it is likewise conceivable that the latter is promptly carried to the liver from all parts of the body. Indeed, the distribution of beta-oxybutyric acid in many tissues rather favors the view that the capacity of forming it belongs to the general properties of all tissue-cells. The new facts regarding the actual extent to which such a compound can fail of further metabolism or elimination and thus remain as a menace to the organism which produces it, are in harmony with the serious consequences properly ascribed to the condition attended by severe ketonuria.

INDUSTRIAL INSURANCE

The Journal has called attention to the development of industrial insurance in England, Germany, Norway and other European countries. Especial attention has been given to the experiment now going on in England, following the passage of Lloyd-George's industrial-insurance bill two years ago, by which, at one stroke, fourteen million working men and women, many of whom were unable to pay for medical services under the old plan, were taken out of the field of private practice and were provided with these services, largely at the expense of the state. In Germany, governmental industrial insurance has been in force for a number of years and its scope has been gradually enlarged, until, in some districts, 95 per cent. of the people are said to be affected by its operations. The Journal has repeatedly expressed the opinion that sooner or later in this country this question will become a matter of vital interest to the public and to the medical profession.

This impression is borne out by a paper on industrial insurance by Dr. J. W. Schereschewsky of the United States Public Health Service, read before the National Association for the Study and Prevention of Tuberculosis.[1] Dr. Schereschewsky's article, although short, should be read by those interested in this subject, and this should include all physicians. Considering the social and evolutionary phases of the question rather than the practical and administrative side, Dr. Schereschewsky finds the explanation for the development of industrial insurance in the gradual growth of appreciation of the consequence to and the interdependence on each other of the individual members of society. "The bitter lessons taught by the ravages of devastating epidemics, the concentration of population in cities, the high degree of specialization in manufactures and similar conditions have all increasingly emphasized man's dependence upon his fellow and shown us how properly to assess the value of the individual unit to society at large." The efficiency of the social unit is conditioned more by the physical status of the individual than by any other one factor. Inefficiency due to ill health constitutes a burden to be borne by the whole of society rather than by the individual. This is the addition to our social concept which may really be regarded as a new discovery. The sickness and disability of the individual is not a burden which should be borne by the individual alone, but is rather a liability for which society, as a whole, is responsible and which should be borne by it, unless the causes for such disability are plainly the fault of the individual. Industrial insurance is the method by which the burden of physical disability is equitably distributed. In this field, as in all others in which it is possible to ascertain the aggregate result of a limited set of causes, it is inevitable that efforts at prevention should at once be inaugurated. Consequently, as soon as any system of industrial insurance has been in operation long enough to acquire definite data as to the cause of disease, it is inevitable that systematic efforts for the prevention of disease will follow, just as systematic efforts for fire prevention have followed the development of fire insurance. This involves, as Dr. Schereschewsky points out, the detection of incipient defects and diseases among workers and the prevention of the development of diseased conditions by proper precautionary measures. This can be secured only by frequent periodical examination of employees and frequent inspection of their environment. Not only bad shop conditions but the total environment of the worker must be included. This means that the unhygienic home as well as the unhygienic workshop must be found, recognized and corrected, and the entire surroundings of the individual subjected to careful scrutiny. The inauguration of such a system, no matter on what basis or exactly at what point the dividing line would be drawn between the insured and the uninsured, would result in the establishment and maintenance of suitable hygienic standards of living for all classes. Enormous economic gains would result through the reduction in the loss of working-time, the saving in expenses for medical attendance, nursing, drugs, etc., and the largely increased wage-earning capacity through increased efficiency.

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[1] Sassa, R.: Ueber den Oxybuttersäuregehalt der Organe normaler und diabetischer Individuen, Biochem. Ztschr., 1914, lix, 362.

[1] Schereschewsky, J. W.: Industrial Insurance: Medical Examination of Employees and Prevention of Sickness Its Proper Foundation, Public Health Reports, June 5, 1914, p. 1417.

Labor unions and workingmen are coming to realize more and more that sound physical health is the only capital which the laborer possesses, and the belief is growing that it is as much the duty of the state to protect and conserve the capital of the laborer as it is to protect the capital of the employer. When labor unions fully realize the importance of this fact, the workingmen of the country will demand that the state take suitable measures for the protection of their health.

Current Comment

SAN FRANCISCO IN 1915

The American Medical Association will hold its next annual session in San Francisco. While the selection of the meeting-place of the Association is always a matter of importance, there is a peculiar appropriateness in meeting next year in connection with the great exposition which is to celebrate the completion of the Panama Canal. While many other organizations and societies will doubtless hold their meetings in San Francisco or its vicinity during 1915, none of them is so directly connected with the exposition and the achievement which it celebrates. Great as were the achievements of the engineers and administrators in rendering possible the completion of the canal, the decisive factor which made its construction possible was the control and practical extermination of infectious diseases. This is the only essential factor in the problem which the French engineers under de Lesseps were unable to master and which the United States under Goethals and Gorgas were able to carry to triumphant solution. The French were not lacking in engineering skill or administrative ability. They had ample equipment, splendid machinery and carefully laid plans, as well as personal determination and endurance; but their laborers died from tropical diseases faster than they could be brought in and set to work. The price exacted in human lives was too great to be paid. In the years which intervened between the collapse of the French efforts and the occupation of the Canal Zone by the United States, much progress had been made in our knowledge of preventable diseases. This, however, would have been of little use had not the Army and Navy Medical Services and the United States Public Health Service been able to furnish trained men who were able to apply the newly acquired knowledge in a practical way and to render this tropical jungle a more healthful place of residence and labor than any of our large American cities. The canal has not merely been completed; it has been completed with a smaller toll of lives than would probably have been exacted from any similar undertaking within our own boundaries, but under different sanitary supervision. When the American Medical Association meets in San Francisco, it can with perfect truth say to the country and the world, "We have a right to meet at this time and in this place because we represent the profession which made possible the construction of the canal which this exposition commemorates." As a commercial undertaking, the Isthmian Canal will doubtless be worth many times over the $300,000,000 which it was estimated that it would cost;

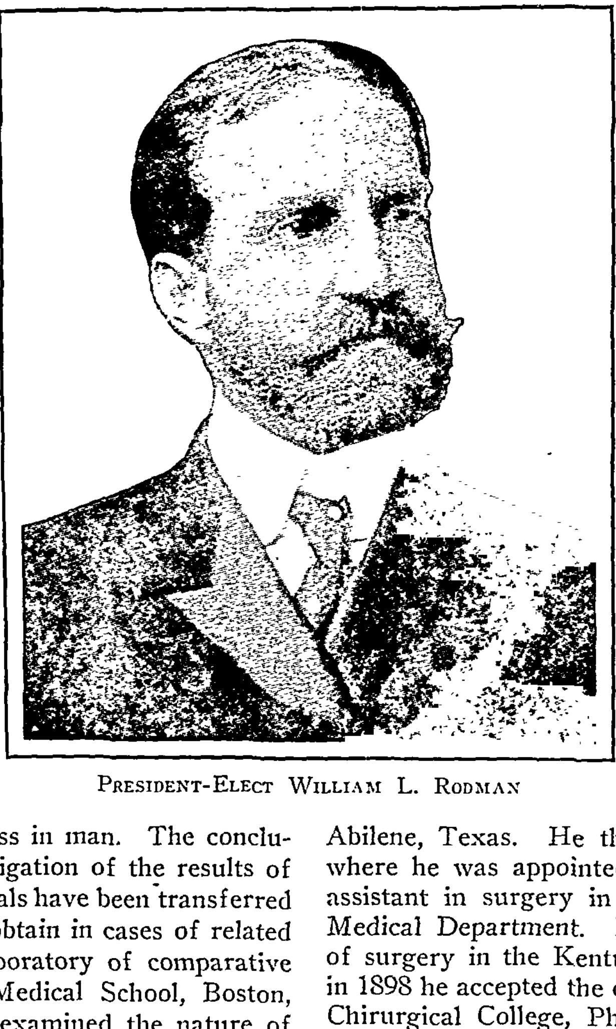
but as a triumphant demonstration of the possibility of modern sanitation it is worth far more than any value which mere money can express. The San Francisco exposition will be a celebration of the most striking achievement of scientific medicine quite as much as a recognition of the successful completion of the greatest engineering undertaking ever conceived.

THE NATURE OF THE CIRCULATORY COLLAPSE IN DIPHTHERIA INTOXICATION

The failure of the circulation, which is a characteristic symptom of the terminal stages of certain infectious diseases and other fatal intoxications, has been ascribed to various factors. The haphazard diagnosis of "heart failure" is no longer permissible in all of the familiar instances of collapse in these cases. There are narcotic poisons which appear to act vigorously and directly on the vasomotor center, leading to extreme depression at a time when the heart itself still seems to be functioning satisfactorily and the respiratory center is still irritable and responsive. Corresponding to this, the circulatory disturbance in certain acute infectious diseases has been believed to illustrate a typical paralysis of the vasomotor center in the medulla oblongata, the heart not appearing to be the weakened link in the chain of circulatory agencies. Experimental infections with the organisms of pneumonia and diphtheria, as well as with cultures of *Bacillus pyocyaneus,* and likewise experimental septic peritonitis, are attended by symptoms which expert observers have declared to be unlike the phenomena of typical purely cardiac weakness in man. The conclusions reached from the investigation of the results of these induced diseases in animals have been transferred to the conditions believed to obtain in cases of related etiology in man.[1] At the laboratory of comparative physiology in the Harvard Medical School, Boston, Drs. Porter and Pratt[2] have examined the nature of the evidence relating to the failure of the circulation in acute infectious diseases, using diphtheria intoxication as the illustrative type. They find that the testimony is essentially negative; that is, the opinion that the vasomotor center is gravely affected or "paralyzed" is based on the failure of most previous observers to obtain any rise in blood-pressure in asphyxia, on stimulation of the nasal mucous membrane or of the sciatic nerve — all procedures which commonly lead to a prompt and unmistakable response through the intermediation of the bulbar vasomotor center. A renewed experimental examination of such responses in animals severely affected by the administration of diphtheria toxin has brought conclusive evidence to the Harvard investigators against the hypothesis that the center is "paralyzed" in diphtheria intoxication even of the severest fatal type. The vasomotor center is not impaired and the cause of the severe collapse in diphtheria must therefore be sought in other factors.

THE PRESIDENT-ELECT

In electing Dr. William Louis Rodman President-Elect, the House of Delegates of the American Medical Association has honored an eminent member of the profession, who is widely and favorably known as a surgeon and as a medical teacher. Dr. Rodman was born in Frankfort, Ky., Sept. 7, 1858. His preliminary education was obtained at the Kentucky Military Institute, from which institution he received the degree of Master of Arts. His medical degree was obtained from Jefferson Medical College in 1879, in the hospital of which institution he served as an intern in 1879 and 1880. In 1880 he entered the Medical Corps of the United States Army and was stationed at Fort Sill, Indian Territory, where he served for nearly two years. From 1882 to 1884 he was engaged in practice in Abilene, Texas. He then moved to Louisville, Ky., where he was appointed a demonstrator and clinical assistant in surgery in the University of Louisville, Medical Department. In 1893, he became professor of surgery in the Kentucky School of Medicine, and in 1898 he accepted the chair of surgery in the Medico-Chirurgical College, Philadelphia. Dr. Rodman was Chairman of the Section on Surgery of the American Medical Association in 1897 and in 1900 delivered the Oration on Surgery. He served the Association as Trustee for a term of three years, beginning in 1900, and was for a number of years the chairman of the Committee on Reciprocity until this work was turned over to the Council on Medical Education. Dr. Rodman has contributed largely to surgical literature. Among these articles, his monograph on "Diseases of the Mammary Gland" deserves special mention.



PRESIDENT-ELECT WILLIAM L. RODMAN

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[1] Gottlieb, R., and Meyer, H. H.: Experimentelle Pharmakologie, p. 280.

[2] Porter, W. T., and Pratt, J. H.: The State of the Vasomotor Center in Diphtheria Intoxication, Am. Jour. Physiol., 1914, xxxiii, 431.

BUBONIC PLAGUE APPEARS IN NEW ORLEANS

As announced in our news columns, bubonic plague has invaded New Orleans. Two cases have been found in the Industrial Home of the Volunteers of America, one death resulting, the post-mortem confirming the diagnosis. Thanks to the ceaseless vigilance of the quarantine officers of the United States Public Health Service, this is but the second instance in which this dread disease has gained a foothold on American soil in the last twenty years, during which time it has made one of its periodic and mysterious circuits of the globe. The four world-wide epidemics of bubonic plague in previous centuries, while carrying unprecedented death and disaster to the human race, did not touch the North American continent, at that time unsettled by civilized men and cut off from communication with the outside world. The announcement of bubonic plague within our borders, if made ten years ago, would have caused consternation and panic throughout the country, while one hundred or three hundred years ago, the disease would probably have been unrecognized and would have smoldered in its characteristic fashion until a large number of cases and many centers of infection had developed. To-day through the knowledge given us by scientific medicine, we know the cause, the method of transmission and the necessary measures for controlling this dread "black death" of history. Knowledge alone, however, will never save. The knowledge must be applied promptly and energetically. No time must be lost in stamping out the infection, which in the case of bubonic plague, is transmitted by rats and fleas. The prompt action of the authorities in New Orleans is in gratifying contrast to the inactivity, delay and evasion of the responsible officials in San Francisco under similar circumstances ten years ago. There has been no hesitation, no attempt to suppress the facts, no "indignation" over the announcement that the health of the city was in danger. New Orleans has learned by years of bitter experience with yellow fever that temporizing and denial always give disease more time to develop. The local health officers promptly recognized the disease. The state health authorities were immediately notified and took action at once. Before the facts had had time to appear in the daily press, the United States Public Health Service had been called on for assistance. Surgeon-General Blue and Surgeon Creel are now in charge of the situation. Wide experience gained in fighting this disease in Honolulu and San Francisco has given General Blue a training for this task possessed by few, if any, other sanitarians, while Surgeon Creel's masterly work in Porto Rico, in controlling the plague on that island, is well known.[1] Swift, decisive and effective action is necessary on the part of local, state and national health officers. The immediate coöperation of the general public and especially of all railroad, transportation and local officials is also necessary. Ports reached by shipping must be watched to prevent landing of the rodents responsible for spreading the disease. It is impossible to state at present the extent of the infection or the number of hidden cases, but we may rest assured that the fight will be waged with the aid of all the weapons of modern science, and that all necessary funds will be promptly provided. Some one has said that the first yellow fever patient always dies, so also with bubonic plague. A characteristic of this disease is that it smolders unrecognized and suddenly breaks out, apparently from a number of different centers of infection. The discovery of two cases in New Orleans indicates that there are other persons infected, and we may look for the report of additional cases in the course of the next week. The country is to be congratulated on the fact that New Orleans and Louisiana have in this emergency wide awake and energetic health officers who have lost no time in acting.

ATLANTIC CITY SESSION

The annual session of the Association held last week at Atlantic City was a most successful one, both in attendance and in work accomplished. The attendance was larger than at any previous session in Atlantic City. A summary of the registration appears on another page. The activities of the Association were reflected in the work of the House of Delegates and its committees. The proceedings of the House, a report of which appears in this issue, shows well the variety and extent of the activities of the Association. The House of Delegates gave earnest study to the various problems that came before it, and a number of important measures were considered and wisely determined. The work of the Scientific Assembly — that is, of the various sections — was unusually good, the programs were excellent and not a few contributions of great value were presented. The Commercial Exhibit was most creditable, and many spoke of the contrast between this Commercial Exhibit of to-day and that of ten years ago. The Scientific Exhibit was a commanding feature, and the interest shown in it evidenced not only the excellence of the work displayed, but also the practical value to the profession and its interest in scientific research. The social events were well planned and contributed largely to the pleasure and profit of the meeting. The ladies were especially well cared for, and with one accord expressed their appreciation of Atlantic City's delightful hospitality. The members of the local profession were untiring in their efforts to make the meeting one of comfort, as well as of pleasure, and they are to be congratulated on their management of this best-attended meeting the Association has held in that city.

PROGRESS IN THE KITCHEN

The fact that a thing has always been done in a certain way — the mere precedent — limits originality and halts progress. For example: In a recent issue of the *Survey* the question why kitchen sinks have been made so low was discussed. No one seemed able to explain. Finally a certain maker discovered that the original sinks were made when the washing of dishes and other sink-work was done in wooden tubs with high sides. Such a tub when used in a high sink came up too far, so the sink was made low. Furthermore, as running water and fixed faucets had not long been made, the tub had to be lifted out of the sink, and the lower the sink the lighter the lift. Though improvements in faucets, dish-pans and other accessories of kitchen sinks have been made, no one has seemed to realize that the sink could be improved by raising. So women were — and are — compelled to endure discomfort when doing their ordinary household work. There may be a certain percentage of inconvenience to be reached before the human mind grasps the fact that something must be altered. The wise inventor attains a reputation for brilliancy by making his invention before the need becomes obvious to others.

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[1] Creel, R. H.: Plague Eradication in Porto Rico, THE JOURNAL A. M. A., May 17, 1913, p. 1527.

Medical News

CONNECTICUT

New Officers.—Willimantic City Medical Society, June 3: president, Dr. Laura H. Hills; secretary-treasurer, Dr. Charles A. Jenkins.——Litchfield County Medical Society, one hundred and fiftieth annual meeting at Norfolk, June 12: president, Dr. Elias Pratt, Torrington; secretary, Dr. Charles H. Turkington, Litchfield. Dr. Frederick S. Dennis, New York City, made an address on "Retrospective Surgery," and Dr. William H. Welch, Baltimore, one on "Retrospective Medicine." Dr. John C. Kendall, Norfolk, in his address, traced the growth of the society since its inception, 150 years ago.

ILLINOIS

Psychopathic Hospital Opened.—The newly completed Cook County Psychopathic Hospital, which replaces the old Detention Hospital, was opened June 26. The new institution has accommodations for three hundred patients, and was erected at a cost of $470,000. County Physician Haim I. Davis will be in charge of the hospital. On June 28, thirty patients were transferred from the temporary quarters in the old College of Physicians and Surgeons building to the new hospital.

Chicago

Fresh-Air Tents for Sick Babies.—Sick babies are finding refuge and medical care in the fresh-air tents of the Elizabeth McCormick Memorial fund. Several tents are already established in the poorer districts of the city. For thirty years, up to the year 1910, there was an average of 748 deaths among the infants under the age of 1 year just during the month of July and 635 during the month of August. The low month was November, with an average of 270.

Summer Outings for Poor Children.—Nearly 1,000 poor Chicago children will have been sent to camps and country towns by the United Charities during the ten day period from June 27 to July 7. It is reported that in the five days ending July 1, 365 mothers and children were sent to various camps. Sixty-five tuberculous children were sent to a special camp on Hickory Creek, near Cherry Hill and Joliet. Only $4,000 of the $20,000 needed has been subscribed for the work, according to D. R. Forgan, treasurer of the United Charities. Citizens are being urged to send in contributions.

IOWA

Personal.—Dr. Alice M. Clark, McGregor, has been appointed local surgeon for the Chicago, Milwaukee and St. Paul Railway.——Dr. Robert Stewart, assistant superintendent of the Mt. Pleasant State Hospital for two years, has resigned to take the position of first assistant surgeon in the sanitarium in Wauwatosa, Wis.——Dr. William P. Crumpacker, Independence, has been reappointed superintendent of the Independence State Hospital.

Epileptic Colony.—It has been finally decided that the State Epileptic Colony will be established on a 1,000-acre tract of land on the interurban line, near Woodward. The cottage construction plan is to be used, each building to be three stories high, of brick and tile construction and to accommodate fifty patients and their caretakers. Several of these cottages are to be arranged in a semicircle, an administration building overlooking them, a central heating station being located in the rear.

NEBRASKA

Northwestern Physicians Organize.—On June 6, physicians from twenty counties met with the Cherry County Medical Society at Wood Lake and organized the Northwestern Nebraska Medical Society. Dr. James M. Tische, Wood Lake, president of the Cherry County Medical Society, entertained the visiting physicians at the Wood Lake Hotel, and also acted as chairman of the meeting. Preliminary steps toward the formation of the society were taken, but the formal organization was postponed until a meeting to be held at Long Pine, July 23. Dr. Walter S. Gates, Kilgore, acted as temporary secretary of the meeting.

MARYLAND

Corner-Stone Laid.—The corner-stone of the John Hubner Psychiatric Hospital, which Maryland is erecting for the care and treatment of acute cases of insanity, was laid June 25. Dr. William A. White, superintendent of the Government Hospital for the Insane at Washington, delivered the address entitled "The New Ideal." Dr. J. Clement Clark, Sykesville, the superintendent, presided at the exercises.

Increase of Tuberculosis Nurses for Baltimore.—A large increase in the number of tuberculosis nurses is under consideration by Health Commissioner Nathan R. Gorter in connection with the reorganization of the department recommended by the United States Public Health Service. There are now seventeen nurses including the chief of the division. It is stated that the force will be increased to thirty-six in the near future. The seventeen nurses now have nearly 4,000 patients under their care. More than 7,000 visits to homes were made during May.

Report of Johns Hopkins Hospital.—The report of Dr. Winford H. Smith, superintendent of the Johns Hopkins Hospital, for the year ended Jan. 31, 1914, shows an increase in the number of patients and a steady gain in usefulness, efficiency and economy. Within the year the Henry Phipps Psychiatric Clinic was opened. Another important event of the past year was the award of the contract and the beginning of the work on the James Buchanan Brady Urological Clinic. The building is to be six stories high and to have accommodations for forty public and twenty private patients. It is expected that the clinic will be open in October. Dr. Smith further stated that the greatest need of the hospital at the present time is a fund which will enable them to run the Harriet Lane Home for Invalid Children to its full capacity of one hundred. At present only thirty-five children can be treated.

MASSACHUSETTS

State Society Meeting.—The one hundred and thirty-third annual meeting of the Massachusetts Medical Society was held June 9 and 10 at the Copley-Plaza Hotel, Boston, and at the Massachusetts General Hospital. Nearly one thousand members and guests were present at the annual dinner at the Copley-Plaza Hotel, at which Dr. Walter P. Bowers, Clinton, retiring president, was toastmaster. The following officers were elected: president-elect, Dr. Charles F. Withington, Boston; vice-president, Dr. Samuel B. Woodward, Worcester; secretary, Dr. Walter L. Burrage, Boston (reelected); treasurer, Dr. Edward M. Buckingham, Boston (reelected); librarian, Dr. Edward H. Bingham, Brookline (reelected), and orator, Dr. Everett A. Bates, Springfield.

Personal.—Dr. John D. Adams, Boston, surgeon-in-chief of the orthopedic department of the Boston Dispensary, has gone to Labrador, where he will perform operations in his speciality at the Grenfell Mission Hospital.——Dr. Frederic M. Briggs has been elected professor of surgery emeritus in Tufts College Medical and Dental School, Boston.——Dr. George B. Magrath, Boston, has been reelected president of the Boston Medico-Legal Society.——Dr. Harold A. Gale, Winchester, has been appointed medical director of the Milk and Baby Hygiene Association.——Dr. William V. McDermott and the other two members of the Salem Board of Health have been summarily removed by the public health director, it is said, because they refused to cooperate with him in attempting to save money in the department.

MICHIGAN

State Health Train.—The Board of Health and Dairy and Food Commission have completed their tentative plans for the tour of the state health train which will leave Lansing, August 2, and will end its tour at Brimley, August 29; after which it will be transferred to Grand Rapids for the week of the state fair.

Personal.—Dr. William H. Price has been reappointed city health officer of Detroit.——Dr. Robert LeBaron, Pontiac, has been appointed medical examiner of the G. A. R. of Michigan.——Dr. and Mrs. Collins H. Johnston and daughters, Grand Rapids, sailed for Europe, June 27.——Dr. Ross U. Adams, Kalamazoo, left for England, June 14.——Dr. Enos C. Kinsman, Saginaw, has been appointed a member of the State Board of Registration in Medicine, vice Dr. Bret Nottingham, deceased.——Dr. Archibald D. McAlpine has been appointed assistant police surgeon of Detroit.

NEVADA

New Appointments.—Dr. Delos A. Turner, Goldfield, has been appointed chief surgeon of the Tonopah and Goldfield Railway Company and of the Goldfield Mining and Operating Company, vice Dr. Eugene A. Wheeler, deceased.

NEW YORK

New Drug Law.—The recently adopted act to amend the public health law of the state in relation to the sale of habit-forming drugs becomes effective on July 1, 1914, and physicians are advised that it is important to make immediate application to the Secretary of the State Board of Health for a supply of medical order blanks for the purpose of providing themselves with morphin, codein, heroin, cocain, etc. It is reported at the same time that the legislature has failed to make an appropriation for the purpose of having the blanks printed.

New York City

Personal.—Dr. Josephine Walter has recently been appointed consulting physician of the medical department of the New York Infirmary for Women and Children and trustees of the same institution. In appreciation of her faithful service and as a token of the high esteem in which Dr. Walter is held, her associates recently presented her with a silver loving-cup.——Dr. William H. Morrison has resigned as a member of the Board of Inebriety.

Baby Hospitals Prepared to Work.—St. Christopher's Hospital, the only infant hospital in the Borough of Brooklyn, which now accommodates forty babies, has purchased land adjoining the institution, on which it is planned to erect an additional building. The institution asks for $150,000 for the building and a like amount for endowment. The Sea Side Hospital of St. John's Guild at New Dorp, Staten Island, began its summer work on June 26. Last summer the floating hospital belonging to this institution carried 28,000 mothers and babies and it is prepared to do even a greater work this year.

The Foreign-Born Population and the Tuberculosis Problem.—Dr. Walter Rathbun, physician in charge of the Otisville Sanatorium, in a recent paper calls attention to the fact that out of 1,197,892 immigrants admitted to this country at Ellis Island during the year 1913, only thirty-eight were debarred on account of having tuberculosis. This represents but a small fraction of the immigrants actually tuberculous. The hospital and sanatorium figures tell a very different story. At the Bedford Hills Sanatorium 84 per cent. of the patients are foreign born and most of them aliens; at the Metropolitan Hospital 51 per cent. are foreign born and 25 per cent. of these are aliens; at the Riverside Hospital, 45 per cent., at Otisville, 42 per cent., and at the Seton Hospital 39 per cent. are foreign born. As the population of New York City includes 40 per cent. of foreign-born people, the proportion of foreign-born patients in these institutions is considerably more than it should be. Dr. Rathbun suggests that the federal government should appoint a committee to investigate this situation and to outline a more thorough system of examination.

Wood Alcohol as an Adulterant.—New York has a strict sanitary code relative to the sale of wood alcohol or preparations containing this drug, either for internal or external use, but New Jersey has more lax laws and consequently many manufacturers in New York make two kinds of preparations, one for sale in New York City and not containing wood alcohol, and another containing this adulterant, for sale in New Jersey. Even the labeling of the preparation as required by the sanitary code does not protect the patron of the barbershop from toilet preparations containing wood alcohol. Since July 1, 1913, the Department of Health has examined 233 toilet preparations intended for external use and the label did not state the presence of wood alcohol in any of the specimens found to contain that adulterant. Of 158 specimens of bay rum examined 61 contained wood alcohol, of 33 specimens of hair tonic 14 contained wood alcohol, of 220 samples of toilet water 11 were found to contain wood alcohol, and of 19 specimens of witch hazel 2 contained it. More drastic legislation designed to prohibit the use of wood alcohol in preparations for external use is now under consideration.

Bureau of Public Health Education.—The Board of Estimate and Apportionment and the Board of Aldermen have approved the proposal of the Commissioner of Health to establish a Bureau of Public Health Education. Dr. Charles F. Bolduan, formerly assistant to the general medical officer of the Department of Health, has been directed to organize a Division of Public Health Education and has been made temporary chief of the division. Among the proposed functions of the bureau are the following: To prepare and publish popular leaflets of public health; to issue press bulletins; to edit the publications of the department; to organize and direct public health lectures, both independently and in connection with existing educational, social, medical and civic agencies; to prepare traveling exhibits on various phases of public health; to prepare and exhibit moving-picture films dealing with the public health; to administer the library of the Department of Health and conduct a journal for study by the department officials; to assist in the organization of a school of sanitary science or in the preparation of practical courses on public health in conjunction with medical schools and colleges, and to inaugurate lecture and study courses within the department for the training of workers.

NORTH CAROLINA

Health Officers' Meeting.—The fourth annual meeting of the North Carolina Health Officers' Association was held in Raleigh, June 15. Dr. William M. Jones, Greensboro, was elected president; and Watson S. Rankin, Raleigh, secretary-treasurer (reelected).

Colored Physicians of State Hold Meeting.—The North Carolina Medical, Dental and Pharmaceutical Association held its twenty-fifth annual session in Winston-Salem, June 18 and 19. The following officers were elected: president, Dr. John W. Jones, Winston-Salem; and secretary-treasurer, Dr. Allen A. Wyche, Charlotte.

New Officers for State Society.—The sixty-first annual meeting of the Medical Society of the State of North Carolina was held at Raleigh, June 16-18, under the presidency of Dr. James M. Parrott, Kinston. Greensboro was selected as the next place of meeting. The following officers were elected: president, Dr. Lewis B. McBrayer; secretary, Dr. John A. Ferrell, Raleigh, (reelected); delegates to the American Medical Association: Drs. John A. Ferrell, Raleigh, and Isaac H. Manning, Chapel Hill; and alternates, Drs. Addison G. Brenizer, Jr., Charlotte, and David T. Tayloe, Washington.

New Members of State Board.—The Medical Society of the State of North Carolina at its recent meeting, elected the following seven members to constitute the State Board of Medical Examiners for the ensuing term of six years: Drs. John Myers, Charlotte; Hubert A. Royster, Raleigh; Isaac M. Taylor, Morgantown; Jacob F. Highsmith, Fayetteville; Martin L. Stevens, Asheville; John G. Blunt, Washington, and Charles T. Harper, Wilmington. The board met for organization June 18, electing Dr. Jacob F. Highsmith, Fayetteville, chairman, and Dr. Hubert A. Royster, Raleigh, secretary.

School for Feeble-Minded Open.—The North Carolina State School for Feeble-Minded opened at Kinston, N. C., July 1 with Dr. C. Banks McNairy formerly of Lenoir, N. C., as director. It is expected to establish in connection with the school a psychologic clinic where children below the average mentality may be carried for expert observation with a view to affording the best facilities for the development of whatever individual capacity may be present. In addition it is hoped to aid in the segregation and protection of young girls of defective type during the years of their lives when they are liable to be most exposed to danger.

PENNSYLVANIA

Personal.—Dr. J. C. Wallace Wallin, director of the psycho-educational clinic in the University of Pittsburgh, has resigned to take up similar duties for the St. Louis public schools.——Dr. Charles E. Thompson, Scranton, had conferred on him the degree of M.A. by St. Thomas' College, Scranton, at its annual commencement exercises, June 16.

Fellowship in Medicine Endowed.—Richard Beatty Mellon, Pittsburgh, has endowed a fellowship in internal medicine in the School of Medicine of the University of Pittsburgh. The fellow is to be a resident of a Pittsburgh hospital, and will work directly under the professor of medicine. Mr. Mellon has also provided funds for the erection and maintenance of an electrocardiographic apparatus.

Tuberculosis Notes.—The campaign of the Berks County Tuberculosis Society for its sanatorium at Neversink Mountain has resulted in contributions of more than $8,000 for the maintenance fund.——On Tuberculosis Day at Reading nearly $7,000 was collected.——The hours of the State Tuberculosis Dispensary at Wilkes-Barre have been changed from the afternoon to 10 to 12 in the morning.——Plans have been approved for the new wing to be erected east of the Cresson Sanatorium building to cost $300,000. The institution now cares for 350 patients.

Faculty News from Pittsburgh.—Associate Professor Ralph Edward Sheldon has been promoted to the full professorship in anatomy in the School of Medicine of Pittsburgh, and has been placed in charge of that department.——Dr. Davenport Hooker of Yale Medical School has been appointed assistant professor of histology and neurology.——Dr. Oscar Klotz, professor of pathology, bacteriology and hygiene, is spending the summer in Marburg, Germany.——Dr. James D. Heard, professor of medicine, has sailed for Europe in the interests of the newly endowed fellowship in internal medicine.

Tablet for Dr. Lemoyne.—At the one hundred and thirteenth annual commencement of Washington and Jefferson College, June 24, a tablet to the memory of the late Dr. Francis Julius Lemoyne, a graduate and for many years a trustee of that college and a graduate of the medical department of the University of Pennsylvania, was presented by the Cremation Association of America, in honor of the fact that Dr. Lemoyne was the founder of cremation in America, having built the first crematory forty years ago. On behalf of the University of Pennsylvania, Dr. Robert S. Stewart, Washington, D. C., made an address.

Philadelphia

Forty Years in Practice.—Dr. E. E. Montgomery celebrated his fortieth year of practice of medicine by entertaining the class of 1874 of Jefferson Medical College at the University Club, June 26.

Banquet for Archbishop.—The staff of St. Vincent's Maternity Home and Hospital gave a dinner at the Bellevue-Stratford Hotel, June 2, in honor of Archbishop Prendergast and the board of trustees.

Hospital Dedicated.—The Jewish Maternity Hospital at 532-534 Spruce Street was formally dedicated, June 10. Edward Brylawski delivered the presidential address, and the response was made by Millard Merz, representing the board of directors.

Personal.—Dr. Thomas B. Holloway has succeeded Dr. James Thorington as professor of ophthalmology, Dr. Charles R. Reed has been elected associate professor of ophthalmology, and Dr. George S. Crampton lecturer on refraction in the Polyclinic Hospital.

Physicians Adopt Automobile Emblem.—The Aesculapian Club has announced that its members will have placed on their automobiles an insignia of a serpent twined on a rod, this emblem to be placed on a keystone, enclosed in a circle, on which are the words "Aesculapian" and "Philadelphia."

Relics for College.—David Lewis has announced his intention of presenting the College of Physicians with two relics of the late Dr. Philip Syng Physic, son of Dr. Philip Physic, keeper of the Great Seal under William Penn. These relics consist of the steel plate of Dr. Physic's visiting card and data concerning an unknown portrait in the college.

Coroner's Report.—According to the annual report of the coroner, there were 280 cases of suicide in the city during the year 1913. Of this number, 160 cases were the result of poisoning, 56 by shooting, 26 by hanging, 11 by jumping from high places and 3 by drowning. There were also 99 homicide cases. There were 3,879 inquests held, an increase of 24 over 1912.

First Health Center Opened.—An experiment in child saving was started, June 22, by the Child Federation Health Center, at Twelfth and Carpenter Streets. A preliminary survey of a restricted area was made and 157 children under 6 years of age, belonging to 377 families were found. The Child Federation has pledged itself to be responsible for the health of every one of these. The center has been established in a new house thoroughly equipped from basement to top floor with every facility needed. It is in charge of Dr. Charles V. Dorwarth. There are also physicians, nurses, interpreters, social workers and an office force. The building is fitted up on the first floor with offices and examining rooms. The second floor is reserved for registration and the third floor for living quarters for the housekeeper. The roof garden for mothers with their babies is supplied with awnings and comfortable seats and may be used later, as an open-air sleeping place for sick babies. The entire population of the selected area is Italian. The center will be opened every day from 9 until 5 and will be free to the women and children of that district.

TENNESSEE

Personal.—Dr. Richard B. Maury has been elected head of the Recreation Board of Memphis.——Dr. G. Manning Ellis, Chattanooga, sailed for Europe, June 13.

New Hospital.—A hospital has been established in Clinton by Drs. Samuel B. Hall and J. O. Woods. The hospital is located in the Hall building, which has been remodeled and thoroughly equipped.

Sanatorium Needs Money.—The trustees of the Chattanooga Tuberculosis Sanatorium at Pine Breeze on Walton Ridge have appealed to the Board of Commissioners for $5,000 to liquidate operating expenses.

Eve Infirmary to Close.—Drs. Duncan and Paul F. Eve, Nashville, announce that they will dissolve partnership and close the Eve Infirmary on October 1. Dr. Paul F. Eve will continue in private practice, and Dr. Duncan Eve, Jr., will join his father in practice. The patients at present in the institution will be removed temporarily to the Douglas Infirmary.

TEXAS

Banquet to State President.—A banquet was given under the auspices of the Tarrant County Medical Society to Dr. Frank D. Boyd, Fort Worth, new president of the State Medical Association of Texas, at the Westbrook, Fort Worth. Dr. S. A. Woodward, president of the Tarrant County Medical Society, officiated as toastmaster.

Bats Must Not be Killed.—An ordinance recommended by the Board of Health and various San Antonio medical societies, which had its origin with Dr. Charles A. R. Campbell, San Antonio, makes it a misdemeanor to kill bats within the city limits of San Antonio. Bats, it is declared, are valuable as scavengers and as eradicators of malaria, since they are destroyers of mosquitoes.

GENERAL

Anesthetists Elect Officers.—The second annual meeting of the American Association of Anesthetists was held in Atlantic City, June 2, and the following officers were elected: president, Dr. Charles K. Teter, Cleveland; and secretary-treasurer, Dr. James Gwathmey, New York City.

Students of Feeble-Minded Meet.—The thirty-eighth annual meeting of the American Association for the Study of the Feeble-Minded was held in Columbus, Ohio, June 18. Dr. H. H. Goddard, Vineland, N. J., was elected president and Mr. A. C. Rogers, Faribault, Minn., secretary-treasurer (reelected).

Fraternal Examiners Elect Officers.—At the triennial meeting of the Association of State Medical Examiners of the Modern Woodmen of America, held in Toledo, June 18, Dr. John H. Conway, Cheyenne, Wyo., was elected president; Dr. L. Weatherspoon, Louisville, secretary; and Dr. Frank A. Greedy, Denver, Colo., treasurer.

Medical Milk Commissioners Elect Officers.—The annual meeting of the American Association of Medical Milk Commissioners was held in Rochester, N. Y., June 19. San Francisco was selected as the next place of meeting. Dr. Thomas C. McCleave, Berkeley, Cal., was elected president, and Dr. Julius P. Sedgwick, Minneapolis, treasurer.

Baltimore and Ohio Surgeons' Meeting.—At the annual meeting of the Baltimore and Ohio Association of Railway Surgeons, held in Washington, D. C., last week, the following officers were elected: president, Dr. Page Edmunds, Baltimore; secretary-treasurer, Dr. C. E. Johnson. San Francisco was selected as the next place of meeting.

Urologists Elect.—At the annual meeting of the American Urological Association, held in Philadelphia, June 18 and 19, the following officers were elected: president, Dr. William E. Lower, Cleveland, Ohio; secretary, Henry L. Sanford, Cleveland; treasurer, Dr. James A. Gardner, Buffalo, N. Y. It was decided to hold the 1915 meeting in Baltimore.

Railway Surgeons Hold Meeting.—The annual meeting of the Norfolk and Western Railway Surgeons' Asssociation was held in Cincinnati, June 16 and 17, under the presidency of Dr. Sparrell Gale, Roanoke, Va. The following officers were elected: president, Dr. Philip H. Killey, Vivian, W. Va.; secretary-treasurer, Dr. Thomas D. Armistead, Roanoke, Va.

Annual Meeting of Southern Railway Surgeons.—The nineteenth annual meeting of the Southern Railway and affiliated lines was held in Washington, D. C., June 18 and 19. Asheville, N. C., was selected as the next place of meeting. The following officers were elected: president, Dr. Henry T. Bahnson, Winston-Salem, N. C.; secretary-treasurer, Dr. Jacob U. Ray, Jr., Woodstock, Ala.

Specialists in Study of Exceptional Children Meet.—The National Association for the Study and Education of Exceptional Children will hold its annual meeting in St. Paul, July 7-10, with the Department of Special Education of the National Educational Association. Dr. Emil Schmitt, New York City, is acting president, and Dr. Maximilian P. E. Grossman, Plainfield, N. J., educational director of the association.

To Make Social Study of Palestine.—A commission consisting of Meyer Bloomfield, director of the Vocational Bureau of Boston, and professor of vocational guidance at Boston University, Dr. Milton J. Rosenau, professor of preventive medicine and hygiene at Harvard Medical School, and Dr. Boris D. Bogen, head of the Jewish Charity Work of Cincinnati, has been appointed to proceed to Palestine to study sanitary conditions, vocational opportunities and charitable conditions among the Jews of Palestine.

Welfare Commission for Cripples.—This national commission held its annual meeting in Philadelphia, June 20, following the convention of the American Orthopedic Association. Plans were made for the literature relating to the education and care of cripples and the *American Journal of Care for Cripples* was designated as the official organ of the commissison. The following officers were elected: president, Dr. Arthur J. Gillette, St. Paul, Minn.; secretary, Mrs. Edith Reeves Solenberger, Lansdowne, Pa.; treasurer, Dr. John L. Porter, Chicago; editor, Mr. Douglas C. McMurtrie.

Insurance Examiners' Meeting.—At the annual meeting of the American Association of Medical Directors, held in Atlantic City, June 22, the following officers were elected: president, Dr. Augustus T. Gaillard, Philadelphia; secretary-treasurer, Dr. Foster K. Collins, Philadelphia. The representatives of the larger companies present joined actively in the discussion of future aims of the association. These plans will be presented to the Medical Directors' Association and the Medical Section of the American Life Convention, and they will undoubtedly result in improving the quality of the examiners' work and in bringing examiners in closer touch in their methods and ideals.

Congress for Obstetrics and Gynecology.—The Seventh International Congress for Obstetrics and Gynecology will be held in New York, Sept. 14, 15, 16 and 17, 1915. Among the subjects to be read are "The Remote Results of Operations for the Relief of Retrodisplacements of the Uterus, both Simple and Complicated," Prof. Th. H. Van der Velde, Haarlem, Holland; "The Treatment of Puerperal Infections," Dr. Edward P. Davis, Philadelphia, and "The Value of Radio-Activity in Gynecological Therapeutics." On Friday September 17, miscellaneous papers will be read. National societies are encouraged to discuss these subjects at least eight months before the meeting of the congress, and to have reporters collect and digest the discussions and report their conclusions.

Bequests and Donations.—The following bequests and donations have recently been announced.

New York State Women's Hospital, $150,000; Presbyterian Hospital, New York City, $100,000; Manhattan Eye and Ear Institute, $50,000; New York Institute for Deaf and Dumb, $50,000; Memorial Hospital for Cancer, New York City, $10,000; St. Luke's Hospital, New York City, $10,000; Denver Home for Consumptives, $50,000, by the will of Maria DeWitt Jesup, widow of Morris K. Jesup.

New York Eye and Ear Infirmary, $10,000, by the will of Miss Serena Rhinelander.

Presbyterian Hospital, Philadelphia, $5,000, for the endowment of a free bed; Children's Hospital, Philadelphia, $1,000, by the will of Elizabeth N. Brown.

Children's Hospital of Philadelphia, $25,000, for the construction and equipment of an operating pavilion, as a memorial to Mary Bankson King Wainwright, by Miss Hetty M. King.

West Philadelphia Hospital, $98,000 of the $150,000 required in the campaign ended June 26.

Additional Donation to Rockefeller Institute.—Mr. John D. Rockefeller has just donated $2,550,000 to the Rockefeller Institute for Medical Research to purchase additional land in New York City adjoining the present plant, and to erect, equip and maintain additional laboratories. The above sum is in addition to a fund of $1,000,000 for the establishment of a department of animal pathology, of which Prof. Theobald Smith has been made director, as previously announced. The department of animal industry will give special attention to the study of hog cholera, foot and mouth disease, diseases of poultry, etc. Mr. Rockefeller's previous gifts to the institute had amounted to nearly $9,000,000, exclusive of the real estate in New York City, and the endowment of the institute will now reach about $12,500,000, making it the most amply endowed institution for medical research in the world.

An American Journal of Parasitology.—In response to an increasing demand, a quarterly publication on this subject has been founded. It is intended to be a medium for the prompt publication of briefer papers and research notes on animal parasites. Longer contributions of exceptional value may be printed occasionally, but ordinarily single papers will be limited to ten or fifteen text pages and outline drawings will be used as illustrations. The reports of the Helminthological Society of Washington, a brief record of personal and institutional items in parasitology and reveiws of books or monographs of special merit are among the features announced. Each number is intended to contain from 70 to 80 pages of text and illustrations and the subscription price is $2 per year. Manuscripts of articles offered for publication, copies of books for review, subscriptions and correspondence should be sent to the Managing Editor of the *Journal of Parasitology*, Henry B. Ward, University of Illinois, Urbana, Ill.

Awarding of the Knapp Medal for Research in Ophthalmology.—In the Section on Ophthalmology at the Atlantic City Session, Dr. Clifford B. Walker, senior house surgeon in the Massachusetts Eye and Ear Infirmary, Boston, was awarded the Herman Knapp Medal for original research in ophthalmology. This medal awarded for original research discovery or for meritorious work for the advancement of the science of ophthalmology is provided for by the Knapp Testimonial Fund, originated in the Section four years ago at the suggestion of Dr. A. E. Bulson, Jr., and administered by the Hermann Knapp Testimonial Fund Committee, of which Dr. Bulson is at present chairman, in honor of the distinguished ophthalmologist, the late Dr. Hermann Knapp of New York. A committee of award is elected each year by the Section to consider the work presented. This is the first medal awarded under the provisions of the fund. The committee this year consisted of Drs. Edward Jackson, Denver; Casey Wood, Chicago, and John E. Weeks, New York. The medal is simple in design, showing in relief a portrait of Dr. Knapp, with a suitable inscription. It is of 22-karat gold, 2 inches in diameter and the designing of the medal, making the die and striking the first copy cost $600. The award was made on the work done by Dr. Walker in connection with his paper on "The Topical Diagnostic Value of the Hemiopic Pupillary Reaction and the Wilbrand Hemianoptic Prism Phenomenon with a New Method of Performing the Latter." A number of ingenious instruments and appliances used in conducting the test were devised and presented by Dr. Walker. At this year's meeting Dr. Walker presented a new clinical instrument for determining the hemiopic pupillary reaction, and in his paper on the subject seems to have established that the Wilbrand phenomenon is of no value in determining the location of brain lesions.

Plague Outbreak in New Orleans.—On June 27, at 3:30 p. m., Dr. W. T. O'Reilly, Health Officer of the City of New Orleans, reported to Dr. Dowling, the chief health officer, a suspicious case of bubonic plague at the Charity Hospital. A thorough examination, which was confirmed bacteriologically and completed at 6 p. m., showed the presence of *Bacillus pestis*. The patient was a Swede named Charles Lundane, 49 years of age, who had been living at the home operated by the Volunteers of America since June 16. There was no record of previous residence. On the night of the 27th, at 6:30, Lundane died, and the necropsy, which was completed at 8:40, revealed typical bubonic septicemia. In the next room to Lundane, in the Volunteers of America Home, was a man named Rufus Wilkinson. On the night of June 27, Wilkinson was removed to the Charity Hospital, and a tentative diagnosis of plague was confirmed bacteriologically. The twenty-six additional inmates of the home are now under strict quarantine. The place has been thoroughly cleaned and fumigated and all clothing and bedding has been burned.

A joint resolution has been introduced in the two houses of the general assembly at Baton Rouge authorizing the governor to borrow $150,000 to be expended in the eradication of bubonic plague and a rigid quarantine of the infected district by local authorities has been inaugurated. Armed guards have been stationed at intersecting streets within four blocks of the Volunteers of America Home. Only breadwinners will be allowed ingress or egress to the quarantined district, which includes some of the large French markets, many of the commission houses and a number of wholesale houses, and they are required to report three times a day for inspection.

Active steps are now being taken by the state and local authorities to begin eradicative work in the making of a sanitary survey. Surg.-Gen. Rupert Blue and Surgeon Creel are at the scene of the outbreak. As a precautionary measure to prevent the spread of the infection by shipping, Surgeon-General Blue has sent warnings to health authorities of the Atlantic coast states and to those of the Mississippi River states as far north as Iowa, suggesting that they take up the work of rodent eradication actively.

Three suspicious cases have been discovered in Santiago, Cuba, and infections continue to be reported from Havana. No new deaths, however, are reported from there.

Ten cents each for live rats has been offered by the health authorities of Galveston. The rats will be examined for traces of bubonic infection. City, state and federal authorities and business interests combined forces at once for a sanitary campaign. The city of Pensacola offered a bounty of 5 cents on each dead rat delivered to the state laboratory.

The prompt activity of the various local and state health officers and the immediate aid of the Public Health Service in this case offer again evidence of the growing efficiency of American health departments.

FOREIGN

Half-Holidays for Physicians in Bohemia.—According to a report of Consul Frank Deedmeyer, Prague, the Association of German Physicians at Prague has arranged for a half-holiday for its members on Sundays and legal holidays, under a system whereby there are designated in rotation for each half-holiday, certain members of the association who will respond to all sick calls from the patients of any member. The office of each physician not on duty is supplied with a list of the physicians on duty for particular days.

CANADA

Academy of Medicine, Toronto.—The Academy of Medicine, Toronto, has closed its seventh year with pronounced success. There are now 396 fellows on its roll. Of these 350 are resident fellows and 46 non-resident. During the past year Drs. Robert A. Stevenson and Horatio C. Burritt were elected life members, and Sir Rickman J. Godlee an honorary member. The financial report showed a saving account balance of $1,619.54.

Seeking Recompense for Vaccination.—What promises to be the first case of its kind in the Dominion will be the prospective suit of a resident of the town of Waterloo, Ont., against the corporation for $25,000 for damages said to be the result of vaccination on the claimant during the epidemic of 1913 and following an order for general vaccination in Waterloo promulgated by the Ontario Board of Health. Since vaccination the appellant claims to have been in ill health for several months and states he has been advised by medical experts that this is due to the vaccination.

Dominion Medical Council.—The Dominion Medical Council met in annual session in Ottawa, June 18 and 19. Dr. Thomas G. Roddick retired from the presidency and was elected honorary president for life. Dr. Robert S. Thornton, Deloraine, Man., was elected president; Dr. R. W. Powell, Ottawa, registrar, and Dr. Robert J. Gigson, Sault Ste. Marie, Ont., vice-president. The examinations will take place in October in Montreal; and in June, 1915, in Winnipeg. All the provinces were represented at the sessions. The Hon. Dr. Roche, Minister of the Interior, was granted the diploma of L.M.,C.C.

Curtailing Infant Mortality in Toronto.—The June *Health Bulletin* of the Toronto Department of Public Health is devoted entirely to prevention of disease and death during the summer months. Considerable of the space is devoted to the baby. Last year there died in Toronto 949 babies under 2 years of age during the summer months. Most of these were from preventable disease as most of the deaths were due to bottle-feeding. One hundred and twenty of the babies visited by the Department of Health nurses died during the summer months and fifty-eight of these had working mothers. Only two were breast fed.

Personal.—The survivors of the *Empress of Ireland* disaster commended most highly the coolness, resourcefulness and courage of the ship's surgeon, Dr. James F. Grant, a graduate of McGill University of last year.——Dr. Perry G. Goldsmith, Toronto, has gone to England.——Dr. Price Brown, the well-known Toronto laryngologist, had one eye removed in New York for glaucoma.——Dr. Herbert S. Birkett, Montreal, has been elected to succeed Dr. Francis J. Shepherd as dean of the medical faculty of McGill University.——Dr. Kennedy C. McIlwraith, Toronto, has returned after spending several months abroad.——Dr. Chester P. Brown, Toronto, has been appointed assistant medical officer and bacteriologist at the William Head Quarantine Station, British Columbia.——Dr. Herbert W. Hill, director of the Hygienic Institute at London, Ont., has been granted a year's leave of absence and will take part in public health work in the state of Minnesota.——Dr. Thomas G. Roddick, Montreal, has been made a knight commander of the Order of St. George and St. Michael by King George V. The honor is in recognition of the long, faithful and successful services of Dr. Roddick to Dominion Registration.

LONDON LETTER

LONDON, June 12, 1914.

House-Flies and Manure as a Nuisance

A somewhat peculiar case has been before the courts in which the owner of a house and grounds brought an action for damages and for an injunction to restrain a neighbor—a market gardener—from depositing manure so as to constitute a danger to his health and interfere with his comfort by reason of the collection of flies and the offensive smell. The defendant pursued the French system of intensive cultivation, necessitating the application of a large quantity of manure, which was accumulated and matured near the plaintiff's wall. The expert evidence was most conflicting. On the one hand Sir Ronald Ross and others stated that the flies and smell constituted a nuisance, and on the other hand, Professor Kenwood and Mr. Ousten (entomologist of the British Museum) denied this. The judge said that the question was whether the defendant interfered with the comfort of the plaintiff in the occupation of his house according to the ordinary notion of English men and women. He found that during the warm months he did so. With regard to flies the evidence was that the house-fly and lesser house-fly bred by choice in horse-manure, and he could only come to the conclusion that the flies of which the plaintiff complained came from the defendant's manure-heap. He was reluctant to interfere with industry, but he must grant an injunction restraining the plaintiff from depositing manure so as to cause a nuisance.

Opening of a Research Laboratory at Bath

At Bath, the fashionable watering-place of the eighteenth century, a new departure has been made. The Royal Mineral Water Hospital has opened a research laboratory in connection with its wards for the study of the pathology of rheumatoid arthritis—a disease which is much treated by hot mineral water. The laboratory was opened by Sir William Osler, who said that the time had come when the most careful laboratory work was absolutely necessary, and there was no place in England which possessed a richer store of clinical material for that work than Bath. Laboratory work was of two kinds—routine and research. The former was of immediate, the latter of permanent value. To the latter we looked for knowledge of the causes of obscure diseases. There were two essentials to any really useful laboratory—a good museum and a modern library. The museum should be made of national use, so that any medical man might come to it and study the pathology of rheumatoid arthritis from a wealth of specimens of all kinds. Osler announced that he would contribute $50 toward the founding of the library. Bath had a splendid medical history and it was a pleasure to him to see that it remained worthy of that record, and that in an age of change it was changing with the times.

A New Veterinary Diploma

The Royal College of Veterinary Surgeons has decided to establish a diploma in veterinary state medicine. It is hoped that this will have the effect of bringing human and animal medicine into more intimate relation in the field of public health. It is proposed that the new diploma shall be known as "the diploma in veterinary state medicine," and that the qualification period necessary before entering into competition for it shall be twelve months of membership of the college. Candidates will be required to receive six months' practical instruction in meat inspection, hygiene of byres, stables and markets, under veterinary inspectors or teachers recognized for that purpose by the Royal College of Veterinary Surgeons, and in addition to fulfil a period of six months' attendance at approved courses of instruction on the following subjects at an affiliated school: (1) epizootiology, (2) veterinary hygiene and toxicology, (3) veterinary bacteriology and protozoology, and (4) chemistry as applied to veterinary hygiene. They will be examined orally and by written paper in epizootiology, veterinary hygiene, including meat and dairy inspection, sanitary laws, administration and reporting and toxicology, and veterinary bacteriology and protozoology. Just as the creation of the public health service opened the way to a general and systematized attack on the problems of life conditions, epidemics and food-supply, so, it may be expected, will this departure insure a wide understanding of animal diseases in their various relations, and contribute to the great work of eliminating sources of infection and rendering the public health secure.

Reform in the Law of Divorce

A bill has been introduced into the House of Lords to reform the law of divorce, embodying the principal recommendations of the recent royal commission (reported in a previous letter to The Journal). It enables husband and wife equally to obtain divorce on the ground of adultery (including any unnatural offense). It enables a judicial separation to be obtained for habitual drunkenness or indulgence in drug habits which render the person a danger to himself or others. A degree of nullity of marriage may be obtained on the grounds (1) of incapacity of either party to consummate the marriage or failure to do so owing to the unreasonable refusal of the defendant; (2) that the defendant was at the time of the marriage of unsound mind or in a state of incipient mental unsoundness which became definite six months after the marriage, or was at the time of the marriage subject to epilepsy or recurrent fits of insanity; (3) "that the defendant at the time of the marriage was suffering from venereal disease in a communicable form" or "pregnancy by some person other than the applicant."

PARIS LETTER

Paris, June 12, 1914.

Fourth Meeting of the French Medicolegal Society

This was held in Paris, May 25-28, under the presidency of Dr. Guilhem, professor of legal medicine at the Faculté de médecine de Toulouse. A number of foreign members from Switzerland and Belgium were present. Among the questions considered, three were most noteworthy: traumatic pleuropulmonary tuberculosis, the necessity of a medical examination for the young delinquent, and natural mummification.

TRAUMATIC PLEUROPULMONARY TUBERCULOSIS

Drs. G. Brouardel and L. Giroux, in their address, began by establishing an important distinction between traumatism occurring to a person already afflicted with tuberculosis which can then aggravate the existing lesions, and that happening to a person who seems absolutely healthy, but who develops tuberculous lesions following the traumatism. In the first case, the responsibility of the traumatism is limited, since it has only aggravated a state which previously existed; in the second case, the responsibility is unrelieved, because by its influence an apparently healthy person is made an invalid. The name of traumatic tuberculosis should be reserved for the latter form. The determining traumatism, as a rule, affects the thoracic wall; in the majority of cases it is a simple contusion of the thoracic wall; more rarely, a fracture of the ribs; still more rarely, a penetrating wound. So-called traumatic pleuropulmonary tuberculosis develops immediately, or from several days to some weeks after the traumatism, so that the maximum lapse of time cannot be fixed with any exactness. The pulmonary lesion appears sometimes in a place which corresponds exactly to the wounded region; as a rule it is on the same side; more rarely it develops on the opposite side. Pleurisy generally occurs in the bruised side. Traumatism would seem most often to provoke the development of a latent local tuberculosis anteriorly; but recent researches permit the belief that the circulation of bacilli in the blood plays a more important part than has hitherto been supposed.

MEDICAL EXAMINATION OF JUVENILE DELINQUENTS

Dr. E. Martin, professor of legal medicine in the Faculté de médecine de Lyon, pointed out the rapid and constant increase in juvenile criminality. It has become so marked that the prison at Lyons has had to build special quarters for these children. The proportion of illiterates among them is 14 per cent. The accusations are divided as follows: robbery, 45 per cent.; vagabondage, 29; assault and battery, 2 per cent. In 46 per cent. of the cases the child's family had been broken up. Tuberculosis was found in the parents of 20 per cent,. and alcoholism, incontestably, in 20 per cent., very probably in 85 per cent. A psychiatric examination of these children should be obligatory. The majority are mentally weak. Except the unmoral children, they are amenable to attempts at education. Dr. Regis, clinical professor of mental diseases at the Faculté de médecine de Bordeaux, remarked that the law of 1912 concerning juvenile courts, while excellent in theory, could not be applied because the schools for that purpose do not exist. It is necessary, therefore, to confide these children to the Assistance publique, which is not intended or equipped to care for these abnormal children. The situation is deplored on every side. Therefore the following resolution was unanimously passed: "Considering that the majority of these young delinquents are abnormal, the meeting declares that the inquiry enjoined by the law of 1912 cannot be satisfactory or give certain results unless a biologic and psychiatric examination is required as well in the case of every juvenile delinquent."

NATURAL MUMMIFICATION

Drs. H. Verger and P. Lande of Bordeaux reported a case of a woman, aged 70, who had died in the room in which she lived, and whose body had mummified. The death had taken place more than six months previously. Dr. Lacassagne, former professor of legal medicine at the Faculté de médecine de Lyon, reported that a man who had been hanged had been found in a cupboard, through the middle of which a chimney passed, and that the upper part of his body was dried, or rather mummified. Dr. Ollive, professor of clinical medicine at the Ecole de médecine de Nantes, recalled having seen the body of a woman which had been lying on straw in a cellar; it was found in a state of mummification: a limb of this mummy is still in the museum of the Ecole de médecine de Nantes.

Fatal Tetanus Following the Treatment of Scoliosis by Abbott's Method

Abbott's method of straightening the veretebral column in scoliosis calls for the application of felt pads at the point of the costal gibbosity, which, thanks to their elasticity, have the effect of correcting the abnormal protuberance because of their efficacious compression. At the meeting, June 2, of the Académie de médecine de Paris, Dr. Kirmisson, professor of surgical clinics on infants' diseases at the Faculté de médecine de Paris, reported two cases in which the use of this felt had brought on fatal tetanus. The first case was that of a girl aged 17½ years with a large dorsal scoliosis of the right convexity. February 10, she was fitted with a plaster corset, according to Abbott's method. February 14 and 21, and on March 7 and 21, layers of felt were successively slipped between the apparatus and the costal protuberance. April 1, trismus set in; the plaster corset was immediately taken off and a little eschar was found on the right costal projection. The patient died about forty-eight hours after the crisis. The second case, noticeably similar, was observed in a girl of 19½, who also died from a very acute tetanus in forty-eight hours, in spite of an injection of 20 c.c. of antitetanic serum.

From these two cases, Kirmisson immediately suspected the felt, and when scraps of the felt were planted in bouillon, numerous colonies of virulent tetanus bacilli were found.

Without wishing to incriminate Abbott's method in itself, Kirmisson considers that these facts should be known by all orthopedic surgeons who have recourse to it. It is, of course, very difficult in this method, which involves the use of an energetic pressure, to escape excoriations or even eschars, which, in contact with the tetanus-breeding felt becomes an open door for inoculation. It is accordingly imperative to sterilize the felt before using it. Considering the numerous uses of felt, these facts should be brought to the attention of the Conseil d'hygiéne, that the manufacture of felt may be submitted to inspection and the public protected from like isasters.

Nursing-Bottles with Tubes

The law of April 6, 1910, forbids the sale and importation of nursing-bottles with tubes (The Journal, Oct. 1, 1912, p. 1211), but it makes no mention of the detached pieces. Therefore, the court of Bayeux has just sentenced a dealer in herbs who, without selling complete nursing-bottles with tubes, had in his store all the pieces which, put together, make them.

Monument to Professor Marey

June 3, in the presence of the president of the republic, a statue of the famous physiologist, Marey, was unveiled in the park of the institute which bears his name at Boulogne-sur-Seine. The monument is the work of the chisel of the sculptor Auban. The illustrious scholar is represented seated, observing attentively a group of runners and horsemen. This idea synthesizes in a degree the work of Marey and his favorite study, the graphic representation of motion.

J.-E. Marey was born March 5, 1830, at Beaune. He was an intern in the hospitals in 1855, and a doctor of medicine in 1859; ten years later he held a chair at the Collège de France, and was elected a member of the Académie des sciences and the Académie de médecine, and founded the physiologic station which has become the Institut Marey. He died in Paris, May 16, 1904. The starting-point of Marey's work was the graphic representation of the movements of men and animals; and to analyze these movements exactly by his method of "chronography," Marey constructed a set of tools. By means of these he set about registering physiologic phenomena (sphygmograph, cardiograph, pneumograph, etc.). All these records were made with a stylus in the form of curves; but Marey did not stop there, and as soon as the first rapid plates appeared he conceived the idea of analyzing movements by successive instantaneous photographs—an idea which led logically to the invention of the cinematograph. Marey's graphic method gave valuable aid not only to physiologic researches, but also to the arts of painting, sculpture and music. Moreover, by his numerous researches on the flight of birds and insects, Marey placed himself in the first rank of the French precursors of aviation.

Personal

At its session, June 2, the Académie de médecine elected Dr. Leon Fredericq, professor of physiology at the University of Liége, and Sir William Osler of Oxford as foreign associates.

BERLIN LETTER

Berlin, June 13, 1914.

Personal

German physiology lost two prominent representatives on June 5. In Königsberg, Ludimar Hermann, for many years the director of the physiologic institute, died at the age of 75. His literary works are chiefly in the same field in which his teacher, Du Bois-Reymond, secured so many important results of investigation, namely, the field of muscle and nerve physiology. But as has often happened, he reached different results and from a pupil became an opponent. Hermann's Text-Book of Physiology has passed through not less than twelve editions and has been translated into all the civilized languages. He founded and edited the physiologic part of the *Jahresbericht über die Fortschritte der Anatomie und Physiologie* and founded and edited for some years the *Zentralblatt für medizinische Wissenschaft.* Of his popular writings, his treatise on vivisection is particularly well known.

Kronecker, also a former pupil of Du Bois-Reymond and director of the Bern Physiologic Institute, died on the same day as Hermann and at the same age. His chief works were in the field of the circulatory system, and especially he discovered as a result of the investigations of his two pupils, Aronsohn and Sachs, a center for coordination of the movements of the ventricles of the heart. In his laboratory there was also found by Aronsohn, a heat center in the brain by the so-called heat-puncture. The center for swallowing, discovered by him, is also of importance. Other articles dealt with the physiology of smell, voluntary muscle movement, the fundamental laws of reflex action and also the innervation of the respiration. He was the author of an improved technic for therapeutic intravenous infusion of sodium chlorid, and other improvements. A few days before his sudden decease, he participated in the meeting of the German Physiologic Society in Berlin and has left a posthumous work on the action of the Nauheim baths. He died at Nauheim, succumbing to apoplexy during a short vacation trip.

E. Rose, formerly director of the surgical department of the Berlin Bethanien Hospital, died at the age of 78 years. Licensed in 1859, he came to the Bethanien Hospital in 1861 as assistant of the surgeon, Wilms. In 1865 he became a member of the faculty as privat-docent for surgery and ophthalmology. In 1867 he was called to the chair of surgery at Zurich. In the summer of 1870 he was given leave of absence by the Zurich University in order to take charge of the Tempelhof Military Hospital at Berlin. In 1871 he was on the battle-field on the Lisaine where he organized the voluntary hospital service of the city of Héricourt and the vicinity of Belfort. In spite of the great respect in which he was held in Switzerland, the love of his native land drove him to return to Berlin where he was made the successor of Wilms in the Bethanien Hospital in 1881 and professor in the Berlin University.

Rose began as early as 1863 to publish important scientific articles, a treatise on vesicovaginal fistula, and in 1864 an article on the treatment of the sick in tents, which was the precursor of our modern fresh-air treatment. Among his important publications the most notable are on the color-scale invented by him for the investigation of color-blindness, errors of color perception, night-blindness, etc.; also on operations for hernia and operations on the head. Considerable attention was attracted early in the seventies by the announcement of his method for operation on the upper jaw with the head pendent; this rendered superfluous the prophylactic tracheotomy until then regarded as essential. There was scarcely any field of surgery to which he did not render important contributions. In 1903, at the age of 67, he voluntarily resigned the superintendence of the surgical department of the Bethanien.

Friedmann's Remedy

The discussion which followed Karewsky's communication and continued through three sessions of the Berlin Medical Society is essentially a complete condemnation of this preparation which was introduced into the world with so great acclaim. Only one physician, who came from the country, could report any favorable results but these were contested for the most part on the basis of opposite observations by competent judges. Eric Mueller, a Berlin pediatrician, who originally was somewhat favorable to the remedy, had nothing to say in spite of the fact that he had announced that he would discuss the subject, and Kraus, who had given a favorable opinion of the method on the occasion of the demonstration of Friedmann's patients, based more on temperament than on facts, had a statement read by a former assistant which varied from the opinions of the other speakers in no important respect. For the present, the question in regard to this remedy may be assumed to have been settled.

Libel Suits on Account of Salvarsan

Two days ago at Frankfort-on-the-Main a suit was tried against the editor of the *Freigeist* who had made the charge against the Frankfort city administration as well as against Herxheimer, the director of the dermatologic department of the municipal hospital of that city, that the city government was deceiving the public and was taking an inconsiderate attitude in the matter of salvarsan; that helpless prostitutes in the city hospitals were being forced to undergo treatment with salvarsan which is a remedy dangerous to life. It was charged that these women were used as experiments the same as if they were rabbits; that the physicians were won with titles and money to become the agents of certain profit-seeking business firms to whom nothing was any longer sacred, and the avarice of these people was extending even to deliberate murder. On account of these and similar accusations, the magistrates and Herxheimer brought a criminal action.

The trial, to which a large number of witnesses and experts were summoned, among whom were both the partisans and opponents of salvarsan, ended with the condemnation of the writer to a year in prison. From the account of the proceedings the impression must be gained that the author of the article is at least mentally inferior, but as he was found on the investigation of a psychiatrist to be responsible, he must pay the full penalty of the law. The judge in the sentence gave the decision that the accused had on the ground of frivolity, avarice, desire of advertisement and of sensation, calumniated a prominent municipality and physicians who were doing their duty in a proper manner.

This trial will be followed after a time by a second libel suit which the editor of the *Muenchener med. Wochenschrift* has instituted against Dr. Kanngiesser of Neuchatel, a privat-docent for toxicology. Kanngiesser, who like the erlin dermatologist Dreuw, has taken the field in the public ress against salvarsan, Ehrlich and all those who favor the new remedy, claims among other things, that the medical press and especially the *Muenchener med. Wochenschrift,* are interested in salvarsan in a business way. From the actions of Kanngiesser it would appear there will be reasons also to examine this man for his mental condition. There is every reason to expect that he will also be convicted of libel if his responsibility is conceded.

Museum for Infant Hygiene

June 4, there occurred the ceremonial opening of a museum for infant hygiene which is established in connection with the Kaiserin Augusta Victoria House with a fund of $7,500 (30,000 marks). The mother will find especially in the departments devoted to birth and development, nutrition and care of infants, all that she needs to enable her to care for her child properly. Also she will find good advice with reference to the care of her own person. In the department for birth and development, the changes which the female body undergoes in pregnancy are illustrated by models, preparations, photographs, etc. She will obtain an idea of the process of birth, and at the same time a rational hygiene of pregnancy and the puerperium. In the same department, she will find the laws illustrated according to which a healthy child develops normally.

A more exact idea of artificial feeding is given by the department on milk and artificial feeding. Here is an ocular demonstration of all that is to be observed in securing cow's milk and what must be done to the milk to adapt it for the infant. The dangers of overfeeding and of one-sided feeding with cereals are shown both by word and by picture. In the department for nursing, models and photographs are collected of everything that serves for the nourishment and care of infants. Here are found the best examples of bedsteads, children's carriages, and of bed- and body-linen. One sees what is necessary for an infant's outfit, whether one has a small or a large purse. It is also shown how the individual pieces must be made and how the child should be clothed in the course of the first month.

In the departments for physical care, general hygiene and diseases of infants, a systematically arranged teaching collection of anatomic preparations, models and illustrations demonstrates the difference between the infant's body and that of an adult, and the abnormalities of the former are also shown by pathologic preparations, photographs and models.

In the department of statistics and hygiene, one can inform himself from tables and curves with reference to the number of births and deaths in the German Empire, the reduction in the birth-rate and its significance, the excess of births, the progress in the growth of the population, the number of deaths and the development of infant mortality, its causes and means to remedy them

The department for hygiene gives an illustration of the best and most advantageous means of maintaining the health of infants and the general subject of hygiene.

The especially interesting department of art presents historical pictures from artists of various nations and from all ages showing the life of the nursing mother and the child.

Session of the German Central Committee for the Campaign against Tuberculosis

At this year's meeting, June 4, of the German Central Committee for the Campaign against Tuberculosis, Langstein, director of the Kaiserin Augusta Victoria House for the campaign against infant mortality, delivered an address on prophylaxis against tuberculosis in infants.

PROPHYLAXIS OF TUBERCULOSIS IN INFANTS

Children in the first and second year of life are from eight to nine times more liable to tuberculosis than adults. The very careful statistics of Pollack in Vienna have given the following convincing, although alarming, facts: Among 285 children from families in which there were persons with open tuberculosis (*Bazillenspucker*) there were found 275 with a positive tuberculosis reaction. Among these there were 57 who were first brought into close relation with the bacilli carriers in the third year of life. Among these only 7 showed clinical tuberculosis. Among the 61 who were exposed in the second and third year, there were 45 clinical cases with 7 deaths, and among the 207 who had been exposed since birth, 200 exhibited clinical tuberculosis, of whom 21 died.

The most radical measure against this tremendous danger is to separate the infant from the tuberculous individual. Some years ago Baginsky advised this measure, beginning with the sixth month, but it must be carried out immediately after birth. To be sure, this is difficult to accomplish. A preferable way is that pointed out by Effler of Danzig. He investigated separately the children of parents who were under hygienic care for tuberculosis before the birth of the infant, those of parents who received such care from the time of birth, and those who received no care at all. This investigation showed a very marked difference in favor of the early care and evidenced the value of instruction at the right time.

Another possibility of prevention consists in protecting the infant constitutionally against infection. Many regard the substances conveyed by the mother's milk as the best remedy. This has not yet been scientifically investigated with sufficient accuracy, and there remains the difficulty that tuberculous mothers who nurse their children may easily infect them and, besides, weaken themselves. Nothing is to be expected from the so-called method of hardening the infant as a protective against tuberculosis. No one can predict whether or not any further success will be obtained from protective inoculation. There remains, therefore, as the best remedy, early isolation and thorough instruction of families in which the agencies which care for the tuberculous and for infants must cooperate.

The infants of the rich are endangered by the carelessness with which nurses are chosen, and the danger from tuberculous midwives needs attention. Isolation, at least for the first few months, is best carried out in institutions, as there is a danger even with the best foster-mothers. By care in institutions, better views with reference to the question of congenital tuberculosis and the constitutional resistance of tuberculous children will be obtained.

An interesting discussion followed the address in which Umber of the Westend Hospital gave statistics from 600 children, confirming the views of Langstein, while von Drigalsky of Halle expressed uncertainty as to whether the failure to react to the von Pirquet test in the first months of life may not depend on a physiologic lack of capability for reaction. Of those infants which received early protection, he had met a great portion later as school pupils; they had survived, but a large portion of them were scrofulous.

Contagious Diseases among Hospital Employees.—A study of the occurrence of contagious diseases among city hospital employees in New York for the years 1907 to 1913, inclusive, shows that the number of infected varies from twenty to thirty-three for each of these years. The number of employees varied from 349 in 1907 to 856 in 1913. The average of those infected for the second half of the period is distinctly lower than that of the first half, which may signify either lessened susceptibility or greater care among the workers. A large percentage of persons infected were nurses, and the medical interns did not escape. Of the total number infected, however, approximately two-fifths were domestic employees.

Marriages

Leo D. Harman, M.D., Forbes, Mo., to Miss Dorothy Newcombe of Provo, Utah, in Omaha, Neb., June 5.

George Kirby Collier, M.D., Sonyea, N. Y., to Miss Clara Louise Prophet of Mt. Morris, N. Y., June 16.

William A. T. Ryan, M.D., Dayton, Ohio, to Miss Catherine Uminger of Pomeroy, Ohio, June 16.

Thomas Harold Reagan, M.D., Canton, Ill., to Miss Bertha Rhenstrom, in Chicago, June 18.

Franklin Eugene Hagie, M.D., Elizabeth, Ill., to Miss Nellie Wells Rae of Chicago, June 30.

Adolph Krebs, M.D. Pittsburgh, Pa., to Miss Mary Margaret Wampler of Irwin, Pa., June 17.

Ross William Griswold, M.D., to Miss Camilla Seymour, both of Litchfield, Ill., May 27.

Charles E. Park, M.D., DeWitt, Ark., to Miss Gussie Burnett at Anna, Ill., June 10.

Robert P. Devereaux, M.D., to Miss Blanche E. Salfingere, both of Philadelphia, June 17.

Harry Lyman Whittle, M.D., to Miss Juanita Whittle, both of Baltimore, June 16.

Herman Friedel, M.D., to Miss Marion Levanthal, both of New York City, June 9.

Deaths

Edward Mansfield Shipp, M.D. Medical College of Virginia, Richmond, 1891; a Fellow of the American Medical Association; surgeon lieutenant-commander, U. S. Navy; who entered the Navy in 1893, and whose last duty was that of commander of the U. S. Naval Hospital, Puget Sound; died in that institution, June 17, after ten years and ten months of sea service, and eight years and five months of shore or other duty, aged 45.

William Henry Pomeroy, M.D. Harvard Medical School, 1886; assistant in therapeutics and materia medica in his Alma Mater in 1886-1887; a Fellow of the American Medical Association; contract surgeon, U. S. Army, since 1902; visiting surgeon to the Springfield (Mass.) Hospital and Children's Home; physician on duty at the Armory Barracks and Recruiting Station; died at his home in Springfield, Mass., about June 10, aged 56.

William Spear Ross, M.D. Wooster University, Cleveland, Ohio, 1876; a Fellow of the American Medical Association; and an eye and ear specialist of Altoona, Pa.; local surgeon for the Pennsylvania System at Altoona; surgeon to the Altoona Hospital, and oculist and aurist to Nason Hospital, Altoona; died in the Altoona Hospital, June 12, from uremia, aged 60.

Simon Marx, M.D. College of Physicians and Surgeons in the City of New York, 1884; a member of the Medical Society of the State of New York, New York Obstetrical Society and New York Academy of Medicine; surgeon to New York Maternity Hospital and gynecologist to the Red Cross Hospital; died at his home in New York City, June 16, aged 50.

Lucien Bowyer Robinson, M.D. University of Virginia, Charlottesville, 1851; a surgeon in the Confederate service throughout the Civil War; and until the abandonment of Andersonville Prison, Georgia, on duty at that post; local surgeon of the Norfolk and Western Railway at Shawsville, Va.; died at his home in that place, recently, aged 76.

James A. Martin, M.D. American Medical College, Eclectic, St. Louis, 1884; a member of the Nebraska State Medical Association; while returning from a professional call, June 10, received glass wounds from the broken wind-shield of his motor-car, which caused his death at his home in Minden, Neb., two hours later, aged about 60.

John M. Coonan, M.D. University of Maryland, Baltimore, 1861; for two years health warden of the Ninth ward of Baltimore; assistant surgeon of volunteers during the Civil War, and for twenty years connected with the medical department of the army for Indian Service; died at his home in Baltimore, June 6, aged 79.

Abram L. Haines, M.D. College of Physicians and Surgeons in the City of New York, 1883; major and surgeon of volunteers during the Spanish-American War, with service in the Philippines, and later one of the medical staff stationed at Empire, Canal Zone; died at his former home in Fultonham, N. Y., April 23, aged 55.

Robert Nelson McConnell, M.D. Wooster University, Cleveland, Ohio, 1865; a veteran of the Civil War, during the last year of which he served as assistant surgeon of the One Hundred and Twenty-Third Ohio Volunteer Infantry; died at his home in Upper Sandusky, Ohio, June 16, from cerebral hemorrhage, aged 71.

Charles M. Butterworth, M.D. Medical College of Ohio, Cincinnati, 1889; a Fellow of the American Medical Association; and formerly president of the St. Joseph County Medical Society; for three years county physician and later city health officer of South Bend, Ind.; died at his home in that city, June 12, aged 48.

Daniel E. Cranz, M.D. Hahnemann Medical College, Chicago, 1877; for many years a member of the staff of the Akron (Ohio) City Hospital, and for many years a practitioner of that city; died at the home of his daughter in Oklahoma City, Okla., June 6, from malignant disease, aged 58.

Richard C. Foulke, M.D. University of Pennsylvania, Philadelphia, 1869; a member of the Medical Society of the State of Pennsylvania; for four terms burgess of Newhope, Pa.; president of the borough council, and secretary of the school board; died at his home in Newhope, June 11, aged 70.

John Senter Davis, M.D. Vanderbilt University, Nashville, Tenn., 1892; of Lone Oak, Ky.; a member of the Kentucky State Medical Association; one of the directors of the Paducah Banking Company; died in a sanatorium in Memphis, Tenn., June 15, from heart disease, aged 46.

Arthur Rogers Tiel, M.D. Eclectic Medical College of the City of New York, 1878; at one time secretary of the Medical Examining Board of the State Board of Regents, and health officer of the village of Matteawan, N. Y.; died at his home in Beacon, N. Y., June 1, aged 59.

Maus Rosa Vedder, M.D. College of Physicians and Surgeons in the City of New York, 1861; assistant surgeon in the army during the Civil War; a member of the Medical Society of the State of New York; died at his home in Caldwell, N. J., June 12, aged 79.

John F. Campbell (license, Missouri, 1883); of La Plata, Mo.; for nearly fifty years a practitioner of Macon County, Mo.; a representative in the legislature in 1901 and 1902; died in a hospital in Chicago, June 8, two weeks after a surgical operation, aged 74.

Thomas Smith Hunter, M.D. Jefferson Medical College, 1866; hospital steward of the One Hundred and Sixty-Ninth Ohio Volunteer Infantry during the Civil War; of Ashland, Ohio; died at the home of his daughter in that city, June 7, from heart disease, aged 74.

Francis A. Bizzell, M.D. Southern University Medical Department, Greensboro, Ala., 1877; University of Alabama, Mobile, 1879; of Fillmore, Cal.; was found dead in his automobile near his ranch at Sespe, Cal., June 3, from valvular heart disease.

Thomas Trenaman, M.D. College of Physicians and Surgeons in the City of New York, 1869; for many years president of Kings College, Windsor, N. S., and health officer of Halifax, N. S.; died at his home in Halifax, April 7, aged 70.

James Garvin Schall, M.D. Hahnemann Medical College, Chicago, 1900; a member of the Colorado State Medical Society; and an oculist and aurist of Leadville, Colo.; died in a bank building in that city, June 17, from heart disease, aged 38.

Daniel Langan, M.D. College of Physicians and Surgeons, Keokuk, Iowa, 1863; a veteran of the Civil War; for several terms president of the Clinton County Medical Society; died at his home in Clinton, Iowa, June 13, from nephritis, aged 78.

Frederick Ferdinand Rudolph Berlin, M.D. University and Bellevue Hospital Medical College, New York City, 1900; a Fellow of the American Medical Association; died at his home in New York City, June 14, from hemorrhage, aged 55.

Edgar H. Neyman (license, registration Wisconsin, 1900); a practitioner since 1890; died at his home in Milwaukee, June 7, from pneumonia, aged 48.

Samuel H. Moore, M.D. Indiana Medical College, Indianapolis, 1870; a veteran of the Civil War; and for forty-two years a practitioner of Indianapolis; died at his home in that city, June 15, from cerebral hemorrhage, aged 71.

Edward Anderson Reiley, M.D. New York University, New York City, 1881; for thirty years a practitioner of Atlantic City, N. J.; died at his home in Atlantic City, June 9, from malignant disease of the throat, aged 59.

Calvin George Mohn, M.D. College of Physicians and Surgeons, Baltimore, 1882; for four years postmaster of Laurelton, Pa., and for two terms a member of the general assembly; died at his home in Lewisburg, June 4, aged 56.

Edmond Henry Kyle, M.D. University of Pennsylvania, Philadelphia, 1876; a member of the Medical Society of the State of New York; and for thirty-three years a practitioner of Ithaca, N. Y.; died about June 9, aged 65.

Robert Norton, M.D. Harvard Medical School, 1893; a Fellow of the American Medical Association; assistant superintendent of Johns Hopkins Hospital, Baltimore; died in that institution, June 19, from typhoid fever, aged 47.

Alfred L. Trigg, M.D. New Orleans School of Medicine, 1859; assistant surgeon in the Confederate service during the Civil War; for forty-six years a practitioner of Lockart, Tex.; died at his home, June 15, aged 79.

Henry T. McKee, M.D. Missouri Medical College, St. Louis, 1884; of Sparta, Ill.; aged 56; a Fellow of the American Medical Association; died in a hospital in St. Louis, June 3, after an operation for mastoid abscess.

Herbert Snowden Fairall, M.D. State University of Iowa, Iowa City, 1903; county physician of Itasca County, Minn., and city physician of Deer River; died at his home in Deer River, June 9, from pneumonia, aged 35.

Thomas G. Fox, M.D. Jefferson Medical College, 1852; one of the oldest graduates of that institution; a member of the state legislature from 1860 to 1862; died at his home in Hummelstown, Pa., June 18, aged 86.

George W. Newman, M.D. New York University, New York City, 1864; surgeon of the Fifth New York Heavy Artillery during the Civil War; died at his home in Brooklyn, June 13, from senile debility, aged 71.

Marcus E. Brown (license, practitioner, Iowa, 1886); for more than half a century a practitioner of Illinois and Iowa; a veteran of the Civil War; died at his home in Clinton, Iowa, June 14, aged 76.

Erastus Monteith Gaston, M.D. Miami Medical College, Cincinnati, 1871; a member of the Ohio State Medical Association; died at his home in West Union, Ohio, February 9, from nephritis, aged 64.

Oliver Perry Mahan, M.D. University of Cincinnati, 1859; a veteran of the Civil War; a graduate in law of the University of Michigan in 1871; died at his home in Lebanon, Ind., June 2, aged 77.

Thomas N. Lownsdale, M.D. Cincinnati College of Medicine and Surgery, 1875; a veteran of the Civil War; died at his home in St. Bernice, Ind., June 15, from cerebral hemorrhage, aged 72.

Thomas McUrgan Hudson, M.D. Washington University, St. Louis, 1894; mayor of Perryville, Mo., for six years; died at his home in Perryville, June 8, from pulmonary tuberculosis, aged 48.

Edwin S. Parker, M.D. Northwestern University Medical School, 1885; a Fellow of the American Medical Association; died at his home in Vermont, Ill., recently, from cerebral hemorrhage, aged 55.

Frederick Johnson Kinney, M.D. Northwestern University Medical School, Chicago, 1912; postmaster of Olds, Iowa; died at his home, June 10, from meningitis due to heat prostration, aged 27.

Harry H. Carnes, M.D. State University of Iowa College of Homeopathic Medicine, Iowa City, 1888; of Champaign, Ill.; died in a hospital in Peoria, Ill., June 8, from disease of the liver, aged 54.

Hugh Willis, M.D. Kentucky School of Medicine, Louisville, 1876; of Summerfield, N. C.; died in St. Leo's Hospital, Greensboro, N. C., June 14, from cerebral hemorrhage, aged 60.

Edgar Augustus Clark, M.D. Dartmouth Medical School, Hanover, N. H., 1884; a member of the New Hampshire Medical Society; died at his home in Concord, May 4, aged 56.

James M. Arnold, M.D. Tulane University, New Orleans, 1871; for more than thirty years a resident of Houston, Texas; died at his home in that city, June 10, aged 76.

William S. Howell, M.D. Atlanta, (Ga.) Medical College, 1893; a member of the Medical Association of Georgia; died at his home in Moultrie, Ga., April 16, aged 47.

Harvey F. Smith, M.D. University of California, San Francisco, 1894; a Fellow of the American Medical Association; died at his home in Pony, Mont., June 11, aged 40.

Winfield Scott Wells, M.D. Rush Medical College, 1890; a member of the Rhode Island Medical Society; died suddenly at his home in Providence, May 2, aged 52.

Archelaus A. Stanley, M.D. Starling Medical College, Columbus, Ohio, 1872; a veteran of the Civil War; died at his home in Rutland, Ohio, March 13, aged 72.

Levi Secord, M.D. McGill University, Montreal, 1876; mayor of Brantford, Ont., in 1893 and 1894; died in the Brantford General Hospital, May 8, aged 60.

Charles B. Lake, M.D. Queen's University, Kingston, Ont., 1866; for more than forty years a practitioner of Ridgetown, Ont.; died at his home, March 18, aged 71.

L. W. Clark (license, years of practice, Illinois); for many years a resident of Rushville, Ill.; died in Carterville, Mo., May 7, from acute gastritis, aged 72.

Martin A. Nelson, M.D. Physio-Medical College of Indiana, Indianapolis, 1894; of Minneapolis, Minn.; died in the St. Paul City Hospital, June 12, aged 54.

William Madison Woodson, M.D. Bellevue Hospital Medical College, 1869; a Confederate veteran; died at his home in Temple, Tex., June 14, aged 74.

Louisa J. Darnstaedt Kean, M.D. Women's Medical College of Pennsylvania, Philadelphia, 1887; of Meriden, Conn.; died in Boston, April 11, aged 69.

Rush Parmenter Brown, M.D. New York University, New York City, 1873; was found dead in bed in his home in Addison, N. Y., April 9, aged 67.

Daniel William Flemming, M.D. Jefferson Medical College, 1889; died at his home in Philadelphia, June 14, from carcinoma of the throat, aged 54.

Alfred Henry Scott Hill, M.D. University of Toronto, Ont., 1874; died at his home in Norwich, Conn., May 16, from cerebral hemorrhage, aged 64.

William B. Richmond, M.D. University of Michigan, Ann Arbor, 1899; of Terre Haute, Ind.; died suddenly in a church in that city, May 10, aged 38.

John N. Lucas, M.D. Pulte Medical College, Cincinnati, 1873; died at his home in Shelbyville, Ind., June 9, from arteriosclerosis, aged 68.

Sanford Junius Deemer, M.D. Western Pennsylvania Medical College, Pittsburgh, 1894; died at his home in Pittsburgh, June 14, aged 56.

Francis Hart Kelley, M.D. University of Louisville, Ky., 1870; died at his home in New Harmony, Ind., from cerebral hemorrhage, aged 78.

Samuel Henry Clay Bixler, M.D. University of Michigan, Ann Arbor, 1870; died at his home in Greencastle, Pa., March 28, aged 69.

Henry H. Pilling, M.D. Hahnemann Medical College, Chicago, 1870; of Tucson, Ariz.; died in Los Angeles, Cal., June 12, aged 68.

George W. C. James, M.D. University of Pennsylvania, Philadelphia, 1864; died at his home in Orbisonia, Pa., April 7, aged 83.

William L. Newlin, M.D. Eclectic Medical Institute, Cincinnati, 1872; died at his home in Los Angeles, June 11, from myocarditis.

John W. Stewart, M.D. College of Physicians and Surgeons, Baltimore, 1878; died at his home in Elmira, N. Y., May 25, aged 63.

Benjamin H. Todd, M.D. University of Maryland, Baltimore, 1874; died at his home in Ridgeville, Md., April 23, aged 50.

Eli R. Tullis, M.D. Hahnemann Medical College, Philadelphia, 1879; died at his home in Camden, N. J., June 12, aged 76.

Lyndsey Oliver Patterson (license, Arkansas, 1903); of Winfield, Ark.; died in Heavener, Okla., June 5, aged 44.

Hiram Luce Chase, M.D. Harvard Medical School, 1846; died at his home in Cambridge, Mass., April 24, aged 89.

The Propaganda for Reform

IN THIS DEPARTMENT APPEAR REPORTS OF THE COUNCIL ON PHARMACY AND CHEMISTRY AND OF THE ASSOCIATION LABORATORY, TOGETHER WITH OTHER MATTER TENDING TO AID INTELLIGENT PRESCRIBING AND TO OPPOSE MEDICAL FRAUD ON THE PUBLIC AND ON THE PROFESSION

ROBINOL AND SEVETOL

Revamping Discarded Theories for Commercial Purposes

It is astonishing how rapidly medical hypotheses become theories and theories are accepted for established facts, when such alleged facts are favorable to commercial enterprise. Yet, as a matter of fact, the manufacturers of proprietary preparations are under a moral obligation, at least, to tell the truth with reference to the scientific basis for their claims. To draw from exploded theories reasons for the use of proprietary preparations is reprehensible, not only because it may lead physicians to use preparations which are worthless, but also because it tends to confirm in the physician's mind, opinions which science has discarded.

Robinol

John Wyeth and Brother put up a mixture of glycerophosphates which they call Robinol. In their description of the properties of this mixture they say:

> "Phosphorus exists in the brain, nervous system, and vital organs as lecithin, of which glycerophosphoric acid is the most important constituent and is essential to the vital processes for the reproduction of life and maintenance of metabolism in old age, impotence, etc."

The first impression on reading this sentence is that it suggests that *glycerophosphates* are essential to the vital processes, although the statement strictly applies to phosphorus. The next sentence confirms this impression and the mind glissades from the accepted fact of the existence of phosphorus in nervous tissue to the unfounded hypothesis that the glycerophosphates are necessary to supply the essential element. In the next sentence the circular continues:

> "In nervous and general debility the glycerophosphates as exhibited in Robinol, are preferable to the mineral phosphates as they contribute the essential constituent of nerve tissue and are absorbed by the cells more readily than any phosphate of vegetable or inorganic origin."

This statement is utterly unfounded. It is in direct opposition to the conclusions of pharmacologists. The glycerophosphoric acid radical is, to be sure, found in the lecithin of nervous tissues, but its source is not known. There is no evidence either that it must be present in the food or that it must be taken as medicine in order that the brain and nervous tissues shall be nourished. When the glycerophosphates are taken there is no evidence that they enter into the composition of the brain or nervous tissue. They are excreted in the urine and feces as phosphates. It has never been shown that glycerophosphates are absorbed any more readily than other phosphates.

But the advertising circular has still more information to impart to physicians:

> "In that group of maladies characterized by faulty nutrition, due to the excessive elimination of phosphorus from the body, as is evidenced by the fatigue and weakness following acute attacks and present in many chronic affections, during the course of fevers and in the later stages of phthisis and all diseases of the nervous system, physicians will find the tonic chalybeate properties of the glycerophosphates of great value."

Physicians know, if the nostrum makers do not, how difficult it is to determine whether there is an excessive elimination of phosphorus from the body. The bulk of the phosphates found in the urine are derived from the food and so little comes from the metabolism of the nervous system that it is not easy to prove that any disease is due to excessive elimination of phosphorus from the body. That fatigue and weakness are due to such a loss of phosphorus is mere assumption, a convenient theory for the exploiters of glycerophosphates. But admitting that nervous waste or faulty nutrition is characterized by the loss of phosphorus, it is easier, cheaper and more rational to supply such loss by the use of phosphorus-containing foods such as milk and eggs, and there is not the slightest evidence that the loss of phosphorus will be influenced in any way by giving a supply in the form of glycerophosphates. Thus, in order to bolster up the sale of a simple solution of glycerophosphates, vague theories and improbable hypotheses are dressed in all the dignity of scientific facts.

Sevetol

There was a time, perhaps a generation ago, when physiologists taught that fats were absorbed into the blood in the form of a fine emulsion. This theory has been definitely disproved and it is now known that fats enter the blood only after a chemical splitting into glycerol and fatty acids, the latter being, to a large extent, combined with alkalies in the form of soaps.

"Sevetol," another Wyeth preparation, is presented to the profession under the claim that it is a very fine emulsion of fats, every portion of which "is readily absorbed through the intestinal wall." To quote:

> "The administration of Sevetol, therefore, does not tax the digestive power of the patient, for it is absorbed with very little effort on the part of the digestive apparatus; and even if the organs of digestion be involved, neither the weakness of the patient nor the severity of the symptoms necessarily contra-indicates its use. The amount ingested is limited only by the power of assimilation exhibited in the tissues, and it may be given in large doses for a continued period of time, or until symptoms of overfeeding are produced, such as coated tongue, anorexia, constipation, headache and lassitude. When these symptoms appear, the administration of Sevetol should be temporarily discontinued and a mild but effective laxative given for several days, after which its use may be resumed."

While the language just quoted is a little more exalted and dignified than that found in typical "patent medicine" advertisements, the thought it expresses qualifies it for a place in the "Lydia Pinkham" or "Peruna" class. Every sophomore medical student knows, if he gives the matter any thought, that Sevetol must undergo the same process of digestion as any other fat. It must be broken up into a fatty acid and glycerol, and saponified before it can be absorbed. It is plainly evident that the amount of Sevetol which can be taken is limited not only by the power of assimilation, but also by the power of digestion. The symptoms mentioned in the advertisement and ascribed to overfeeding, are the symptoms, not of a system saturated with absorbed fat, but of digestive organs rebelling against an unusual diet.

The exploitation of Sevetol is but one more case of turning to commercial account an exploded theory. Isn't it about time that our profession demanded that the purveyors of medicinal products tell the truth? And isn't it time, too, that we cease taking our pharmacology and therapeutics from proprietary manufacturers?

Correspondence

Proposed Pneumothorax Association

To the Editor:—The treatment of pulmonary tuberculosis by means of artificial pneumothorax has become quite general all over the country. It frequently happens that a patient who has been under treatment has to remove to another locality for economic or other reasons. In many of these cases it is greatly desirable and necessary that the pneumothorax be "kept up." In the past year, several of my patients have left Denver for Chicago, New York and other cities, and I have wished, in several instances, that I might know of some one to whom I might refer them for further treatment and observation.

For the benefit of such patients and for the furtherance of all questions connected with pneumothorax therapy, I think it would be a good idea that the men who are doing this work form an association. This would enable us to refer such cases to each other and feel that we are placing our patients in competent hands.

I would therefore ask those interested in pneumothorax work, and in the idea of forming an association, to communicate with me.

H. Schwatt, M.D., Edgewater, Colo.
Superintendent, Sanatorium of the Jewish Consumptives' Relief Society.

Cooperatively Conducted Local Hospitals

To the Editor:—I have learned that in a number of localities the physicians of small country towns have joined together and conducted a successful hospital for the community. Please give me plans or methods of undertaking the establishment of a hospital of the kind in a county seat town of about 2,000 inhabitants, by-laws governing the physicians interested, etc. Please give me the addresses of physicians who have adopted such methods of work and all the information you can to get a movement of this kind started in our community.

M. P. O.

[Comment.—We shall be glad to receive information regarding the proposition, either for publication or to be forwarded to the writer of the letter.—Ed.]

Queries and Minor Notes

Anonymous Communications and queries on postal cards will not be noticed. Every letter must contain the writer's name and address, but these will be omitted, on request.

TOOTH DETERGENTS

To the Editor:—Has The Journal published any report on the detergent and antiseptic effects of the various preparations advertised for cleansing the teeth? If not, would it not be well in the interest of many readers who must wish accurate information on the selection of an effective agent to have the Council examine and report on this question?

S. T. A.

Answer.—The Journal has published recently in the Department of Therapeutics (Nov. 8 and 15, 1913, pp. 1719 and 1812) an article on oral cleanliness which discusses the principles involved in the use of tooth-powders and other preparations for cleansing the teeth. One of the constituents of many tooth-powders is soap, and this ought to be a harmless substance except for the objection to its alkalinity. The reason for employing an alkaline substance seems to be that it is recognized that dental decay is due to the effect of acids formed by fermentation. These acids, however, do not accumulate on the teeth in the free state but unite with the lime-salts of the enamel or dentine as soon as they are formed. The alkalinity of the ordinary tooth-powder can be of little service because its occasional application can do nothing to check the action of acids which are continuously formed during the intervals. Moreover, the use of an alkaline application to the teeth may be a positive detriment by depressing the secretion and alkalinity of the saliva on the principle that a secretion which is no longer needed ceases to be formed. Pickerill ("Stomatology in General Practice," p. 100) has shown that alkalies applied to the teeth and gums reduce both the amount and alkalinity of the saliva secreted subsequently to the application of the alkali, while the reverse effect is produced by acids. Hence he recommends a weakly acid application rather than the alkali. Another reason for the use of acid has been advanced by W. J. Gies (*Household Arts Review*, May, 1913, p. 12; The Journal, Nov. 8, 1913, p. 1719), who found that alkaline applications did not readily dissolve the mucus which retained the fermenting food on the teeth and hence were not efficient cleansers. He also advocates the substitution of acid solutions. Pickerill has found that daily rubbing the teeth with a weak solution of tartaric acid did not remove any appreciable amount of the material of the tooth. It seems, therefore, that tooth detergents should be made of weak acids rather than weak alkalies.

An antiseptic is usually added to these preparations with a view to hindering the proliferation of the numerous micro-organisms which are found in the mouth or introduced with the food. It is time that physicians should have clear ideas as to what can be expected from antiseptics applied to the oral cavity. To disinfect the mouth would be a difficult matter, and in practice is not worth attempting, unless by the direct work of a skilful operator. To give the patient an antiseptic with which to treat the mouth is worse than useless. If the object is to prevent putrefaction or fermentation it is much simpler to remove mechanically the fermentable material than to attempt to preserve it with an antiseptic. Pickerill suggests that not only is an antiseptic which is in contact with the organisms not more than three minutes a day of no use, but not improbably it has the reverse effect—that of producing a more vigorous and resisting strain of organisms due to the *slight* and *intermittent* opposition to their growth and to the survival of the fittest. This author states that for a chronic and slowly progressing lesion like caries of the teeth, the intermittent use of antiseptics is of no value. Their use should be limited to acute conditions and then they should be used frequently and in full strength, that is, as strong as can be tolerated, with the object of rapidly reducing the number and virulence of the organisms.

OPERATING-ROOM SLUMBER SONGS

To the Editor:—In your issue of June 6, I read with interest Dr. Kane's account of his musical operating-room. No doubt it is an admirable way of assisting the anesthetist, although I can imagine some of the disadvantages. For example, a patient given to dancing might become uncontrollable on hearing the "Argentine Tango," and then, again, the surgical nurse might be the cause of complications were one to play the "Matrimonial Glide." But outside of these unforeseen accidents good results could no doubt be obtained.

As a historical note I would add that Dr. Kane is not a pioneer in this respect. Henri de Mondeville (1260-1320), a shining light in his time and possessed of a most delightful line of sarcasm, advocated the following:

"Keep up your patient's spirits by music of viols and ten-stringed psaltry, or by telling him that he has been elected to a bishopric if a church man, or by forged letters telling him of the death of his enemies."

R. W. Mendelson, M.D., Des Moines, Iowa.

Answer.—Apropos of this we quote the following suggestions from B. L. T.'s Line-O'-Type Department of the Chicago *Tribune:*

SELECT YOUR RECORD [June 8]

"I owe to Dr. Burdick, our anesthetist, thanks for his selection of records admirably adapted to the tastes and temperament of the subjects."—Evan O'Neil Kane, M.D., Kane, Pa.

This opens up a new avenue of fancy. When you are laid on the table and the saw is called for, what would be your choice of phonograph records? M. F. votes for "This is the Life."

THE ANESTHESIEST WAY [June 10]

Select your phonograph record before you go "under the knife."
Chick: "You can put me down for 'Good-Bye, Everybody.'"
L. C. W.: "'If You Talk in Your Sleep, Don't Mention My Name.'"

THE ANESTHESIEST WAY [June 12]

When I am on the table
  And the surgeon's saw I see,
Let the intern start the record,
  "What Will the Harvest Be?"

—Martha.

Dandy: "Just Tell Them that You Saw Me."
F. R.: "Please Go 'Way and Let Me Sleep."
W. M. B.: "Any hymn found in the appendix—to be followed by a collection."

THE ANESTHESIEST WAY [June 15]

C. E. B.: Turn on the record, "How happy could I be with Ether were t'other dear charmer away."
P. B. D.: "I Don't Know where I'm Going, But I'm on My Way."
F. G. F.: "Good Night, Nurse."
M. L. P.: "She Sleeps in the Deep."

THE ANESTHESIEST WAY [June 20]

Prize record, besought by H. M.: "Let a little sunshine in."

ARTICLES ON INTESTINAL OBSTRUCTION DUE TO WORMS

To the Editor:—Kindly refer me to any literature on the subject of ascariasis.

H. Robenstein, M.D., Chicago.

Answer.—The following is a list of articles on the subject:

Van Meter, B. F.: Intestinal Obstruction Due to Roundworms, *Surg. Gynec. and Obst.*, April, 1909.

Venning, R. E.: Intestinal Obstruction from Ascarides Lumbricoides, The Journal, June 18, 1910, p. 2041.

Whelan, Charles: Intestinal Obstruction Due to Ascarides Lumbricoides, with Autopsy, The Journal, Oct. 22, 1910, p. 1442.

Roll, J.: Oxyuris as a Cause of Ileus, *Norsk. Mag. f. Laegevidensk.*, 1910, lxxii, No. 1.

Burn, V.: Helminths Complicating Operations on Children, *Policlinico*, Rome, Oct. 6, 1912, p. 1481; abstr., The Journal, Nov. 9, 1912, p. 1757.

Braun, M.: Animal Parasites of Man, New York, William Wood & Co., 1906, $5.

Doflein, F.: Lehrbuch der Protozoenkunde, Ed. 3, Jena, Fischer, 1911.

Mense, C.: Handbuch der Tropenkrankheiten, Ed. 2, Leipsic, Barth, 1913. (D. A. Looss contributes a large part of this.)

Fertig, J.: Incision of Common Bile-Duct for Obstruction by Ascarides, *Deutsch. Ztschr. f. Chir.*, April, 1912; abstr., The Journal, June *1, 1912*, p. *1729*.

Rosenthal, R.: Ascaridiasis of the Bile-Passages Simulating Cholelithiasis in the Elderly, *Deutsch. Ztschr. f. Chir.*, March, 1913.

Allen, M. D.: Ascaris Lumbricoides as a Complication of Surgical Operation, The Journal, June 21, 1913, p. 1953.

Echeverria, E.: Remarkable Resistance to Combined Ascaris and Hookworm Infection, *New York Med. Jour.*, Feb. 24, 1912.

Fraser, T. A.: Intestinal Parasites, *Kentucky Med. Jour.*, Nov. 1, 1913.

Row, T. G. S.: Roundworms and Pregnancy, *Indian Med. Gaz.*, October, 1913.

Lechler, A. and Plew, H.: Ascarides in Children, *Arch. f. Kinderheilk.*, 1913, lxii, Nos. 1 and 2.

Pflugradt, R.: Ascarides in the Bile-Passages, *Deutsch. med. Wchnschr.*, Jan. 29, 1914.

PUBLICATIONS ON CHRISTIAN SCIENCE

To the Editor:—I am writing for information on Christian Science. If you have something on that subject I would appreciate your sending it to me, or putting me in touch with some one from whom I can secure an article concerning it.

C. D. Dixon, M.D., Dixon, Ill.

Answer.—The following is a list of recent publications on this subject:

Peabody, F. W.: Religio-Medical Masquerade, Boston, Hancock Press, 1910.

Paget, Stephen: Faiths and Works of Christian Science, New York, the MacMillan Company, 1909.

Books on Christian Science, Queries and Minor Notes, The Journal, Aug. 29, 1908, p. 778. This contains a list of books and articles.

Faith Without Works, Current Comment, The Journal, Oct. 11, 1913, p. 1383.

Chapin, H. D.: Christian Science in Operation, *Med. Rec.*, New York, Dec. 16, 1911.

Christian Science and the Sex Problem, *Outlook*, Sept. 13, 1913.

MacCulloch, C.: Concerning Christian Science, *Independent*, Aug. 28, 1913.

Knott, J.: Christian Science, *St. Paul Med. Jour.*, April, 1911.

Stevens, B. N.: Failure of Christian Science to Differentiate Dropsy and Pregnancy, The Journal, Dec. 21, 1912, p. 2274

Mrs. Eddy and the National League for Medical Freedom, Current Comment, The Journal, Feb. 24, 1912, p. 559.

Senator Works and the Los Angeles County Society, Current Comment, The Journal, Dec. 2, 1911, p. 1843.

DISTINCTION BETWEEN "TUBERCULOUS" AND "TUBERCULAR"

To the Editor:—Will you kindly inform me concerning the proper distinction between the terms "tuberculous" and "tubercular"?

Sanford B. Hooker, M.D., Boston.

Answer.—Careful writers apply the term "tubercular" to lesions characterized by the presence of nodes or tubercles, whether caused by the tubercle bacillus or by any other agent; and "tuberculous" to lesions produced by the *Bacillus tuberculosis* or to conditions associated in one degree or another with tuberculosis. That is to say, the word "tubercular" applies to the external form of a lesion; the word "tuberculous," to the cause, actual or possible, of a lesion or a condition. Thus, tubercular leprosy, caused by the *Bacillus leprae*, is so called because of the nodular character of the lesions, while tuberculous pleurisy is so called because produced by the tubercle bacillus. A "tuberculous diathesis" is a predisposition toward tuberculosis; the tubercle bacillus, whether capable of being demonstrated or not, is regarded as a factor, potential or operative, in the condition.

Sanitary Environment in Places of Employment.—The sanitary conditions of the places of employment have a distinct and direct bearing in the causation of disease through poor general conditions, poor lighting, heating and ventilation, overcrowding, excessive humidity and special conditions of deleterious gases, fumes, dust, poisons and the like. These conditions are so obviously causing disease and are so prevalent in so many industries and causing so much direct injury to the workers that the general public have come to consider these as the full extent of the damages for which industrial conditions are responsible.—B. S. Warren in *Pub. Health Rep.*

Medical Education and State Boards of Registration

COMING EXAMINATIONS

Alabama: Montgomery, July 14. Chairman, Dr. W. H. Sanders, Montgomery.

Alaska: Juneau, July 7. Sec., Dr. Henry C. De Vighne, Juneau.

Arizona: Phoenix, July 7-8. Sec., Dr. John Wix Thomas, Phoenix.

Colorado: Denver, July 7. Sec., Dr. David A. Strickler, 612 Empire Bldg., Denver.

Connecticut: New Haven, July 14-15. Sec., Dr. Chas. A. Tuttle, New Haven. Homeopathic: New Haven, July 14. Sec., Dr. Edwin C. M. Hall, New Haven. Eclectic: New Haven, July 14. Sec., Dr. T. S. Hodge, 19 Main St., Torrington.

Indiana: Indianapolis, July 14-16. Sec., Dr. W. T. Gott, State House, Indianapolis.

Maine: Augusta, July 7-8. Sec., Dr. Frank W. Searle, 776 Congress St., Portland.

Massachusetts: Boston, July 14-16. Sec., Dr. Walter P. Bowers, Room 159 State House, Boston.

New Mexico: Santa Fe, July 13. Sec., Dr. W. E. Kaser, East Las Vegas.

North Dakota: Grand Forks, July 7. Sec., Dr. G. M. Williamson, Grand Forks.

Oklahoma: Oklahoma City, July 14. Sec., Dr. John W. Duke, Guthrie.

Oregon: Portland, July 7-9. Sec., Dr. L. H. Hamilton, Medical Bldg., Portland.

South Dakota: Deadwood, July 14. Sec., Dr. P. B. Jenkins, Waubay.

Utah: Salt Lake City, July 6-7. Sec., G. F. Harding, 405 Templeton Bldg., Salt Lake City.

Vermont: Burlington, July 14-17. Sec., Dr. W. Scott Nay, Underhill.

Washington: Seattle, July 7. Sec., Dr. C. N. Suttner, Baker Bldg., Walla Walla.

Wyoming: Laramie, July 9-11. Sec., Dr. H. E. McCollum, Laramie.

Teaching Fellowships in Medicine

The University of Minnesota Medical School has adopted the principle of teaching fellowships in the clinical departments, with the end in view of providing well-trained full-time assistants and research workers and at the same time giving a basis for graduate instruction in the various specialties. It is arranged that the fellowships be in three grades, namely, first year, $500; second year, $750, and third year, $1,000.

To be eligible to a first-year fellowship, a candidate, as a general rule, must have received his M.D. degree from an acceptable school and have served one year as intern in a good hospital. The fellows appointed under this system will give their entire time to study, research and such assisting in clinics as they may be prepared for. A course of study will be laid out for each fellow, adapted to prepare him for the specialty chosen by him. This course will include work in the laboratory branches, dispensary service, hospital service and investigation. It is probable that the course (of two or three years) will lead to a degree properly recognizing the specialty in which the candidate has worked. Arrangements may be made whereby these fellows can spend one year at the Mayo Clinic and count the same toward the advanced degree.

In order to inaugurate the system the Board of Regents of the university has authorized the following teaching fellowships for the next school year: one each in medicine, in surgery, in obstetrics and gynecology, and in eye, ear, nose and throat work, each of $500. There is also provision for one $500 fellowship and one $1,000 fellowship in mental and nervous diseases, or in lieu of these a $1,500 instructorship.

District of Columbia Reports

Dr. George C. Ober, secretary of the Board of Medical Supervisors of the District of Columbia, reports the oral and written examination held at Washington, April 8-10, 1913. The number of subjects examined in was 8; total number of questions asked, 80; percentage required to pass, 75. The total number of candidates examined was 10, of whom 8 passed and 2 failed. The following colleges were represented:

PASSED College	Year Grad.	Per Cent.
Georgetown University	(1911)	90
George Washington University	(1911)	91.6
Howard University	(1912)	80.6, 83.8

College	Year Grad.	Per Cent.
Columbia University, College of P. and S.	(1905)	85.1
Temple University	(1910)	81.3
Women's Medical College of Pennsylvania	(1910)	82.9, 87.4
FAILED		
Maryland Medical College	(1912)	71.4
College of Physicians and Surgeons, Boston	(1910)	73.2

At the examination held July 8-10, 1913, the total number of candidates examined was 24, of whom 20 passed, 2 failed and 2 were refused license. The following colleges were represented:

College	Year Grad.	Per Cent.
PASSED		
Georgetown University (1902) 83; (1912) 79.6;	(1913)	81.1, 82.1, 91.5, 96.4.
George Washington University (1912) 85.4;	(1913)	88.3, 89.7, 93
Howard University	(1913)	80.1
Bennett Medical College	(1913)	81
Hering Medical College	(1906)	77.1
University of Maryland	(1912)	81
College of Physicians and Surgeons, Boston	(1910)	75.8
New York Homeo. Medical College and Hospital	(1913)	78.4, 83.1
University of Pennsylvania (1907) 84.8;	(1913)	81.7
Vanderbilt University	(1912)	88.6
FAILED		
Maryland Medical College	(1913)	69.2, 74.9

At the examination held Oct. 14-16, 1913, the total num- f candidates examined was 13, of whom 12 passed and d. The following colleges were represented:

ollege	Year Grad.	Per Cent.
PASSED		
Georgetown University	(1912)	84.4, 86.2
George Washington University (1912) 78.4;	(1913)	86.6
Howard University (1911) 91.7; (1912) 79.4;	(1913)	76.1
Johns Hopkins University (1912) 81.9;	(1913)	90.8
Maryland Medical College	(1913)	75.8, 75.8
University of Maryland	(1912)	75.4
FAILED		
Maryland Medical College	(1911)	67.2

Five candidates were licensed through reciprocity from July 12 to Nov. 18, 1913. The following colleges were represented:

LICENSED THROUGH RECIPROCITY

College	Year Grad.	Reciprocity with
Howard University	(1909)	Texas
Baltimore Medical College	(1907)	Louisiana
College of P. and S., Baltimore	(1906)	W. Virginia
University of Missouri	(1887)	N. Carolina
Jefferson Medical College	(1897)	W. Virginia

Oklahoma January Report

Dr. J. W. Duke, secretary of the Oklahoma State Board of Medical Examiners, reports the written examination held at Oklahoma City, Jan. 13-15, 1914. The number of subjects examined in was 10; total number of questions asked, 100; percentage required to pass, 70. The total number of candidates examined was 8, of whom 5 passed and 3 failed. Twelve candidates, including 1 osteopath, were licensed through reciprocity. The following colleges were represented:

College	Year Grad.	Per Cent.
PASSED		
Georgetown University	(1912)	87
George Washington University	(1912)	87
Bennett Medical College	(1913)	82
College of Physicians and Surgeons, Baltimore	(1887)	75
St. Louis University	(1913)	83
FAILED		
College of Physicians and Surgeons, Little Rock	(1910)	64
University of Arkansas	(1911)	70
Vanderbilt University	(1893)	65

LICENSED THROUGH RECIPROCITY

College	Year Grad.	Reciprocity with
University of Arkansas	(1909)	Arkansas
Howard University	(1912)	W. Virginia
University of Georgia	(1908)	Georgia
Central College of Physicians and Surgeons	(1904)	Indiana
State University of Iowa, Coll. of Homeo. Med.	(1900)	New Mexico
Eclectic Medical University, Kansas City	(1911)	Arkansas
Epworth College of Medicine	(1910)	Arkansas
Chattanooga Medical College	(1910)	Tennessee
Memphis Hospital Medical College	(1909)	Mississippi
University of the South	(1906)	Mississippi
Vanderbilt University	(1886)	Texas

ANATOMY

1. What passes through the foramen magnum? 2. Give origin and insertion of sartorius muscle. 3. Name the parts severed in amputation of the lower third of the thigh. 4. Name the organs in the thoracic cavity. 5. Locate and describe the popliteal space. 6. How long is the alimentary canal in the adult? 7. Locate and describe the atlas. 8. Give origin of the gastric artery. 9. How many different bones in the body? 10. Give articulations of the humerus.

BACTERIOLOGY AND PATHOLOGY

1. Name four modes by which disease is extended, and the process of extension. 2. Define necrosis. Give four causes for same. Illustrate each. 3. What is fatty degeneration? Name three causes for same. 4. What do you understand by pathologic pigmentation? Give three methods by which the same is derived. 5. Define degenerative, exudative and proliferative inflammation. 6. Name three ways by which connective tissue may be derived. 7. Name three pathologic results which usually follow the softening of a thrombus. 8. What is tinea tonsurans and its effect on the body? 9. In a suspected tuberculous brain, name the parts you would first examine. Why? 10. Give the pathologic change that takes place in the blood of pellagra patients.

PHYSICAL DIAGNOSIS

1. What are râles? 2. Name the varieties of râles usually met with. 3. What do pulsations at the base and border of the heart indicate? 4. What is a murmur? 5. How are murmurs best heard and timed? 6. Name the physical signs of the lung cavity. 7. Name the methods of auscultation. 8. Diagnose aortic aneurysm. 9. Differentiate aortic aneurysm from tumors. 10. Diagnose first, second and third stages of lobar pneumonia.

TOXICOLOGY AND MEDICAL JURISPRUDENCE

1. What are the symptoms of acute poisoning from arsenic? Give antidote. 2. The body of a new-born baby found dead. How could it be determined whether the child had been born alive or not? 3. What are the symptoms of acute poisoning from bichlorid of mercury? Give the antidote. 4. What are the symptoms of acute poisoning from antimony? Give the antidote. 5. What is the maximum dose of morphin sulphate? 6. What is the maximum dose of strychnin sulphate? 7. Give some of the symptoms of traumatic hysteria. 8. Give a definition of melancholia; mania; katatonia. 9. Define criminal malpractice. Civil malpractice. 10. If a person should be improperly committed to an insane asylum what legal procedure would be necessary to secure his release?

OBSTETRICS AND HYGIENE

1. (*a*) What is the pelvis? (*b*) False pelvis? (*c*) True pelvis? 2. What are the straits of the pelvis? Give diameters of each. 3. (*a*) What is the liquor amnii? (*b*) How is it useful and what are the dangers of scanty liquor amnii? 4. (*a*) State the probable cause of face presentation. (*b*) How would you manage a case? 5. What are the dangers of feeble uterine contractions in the different stages of labor? Give your treatment in each stage. 6. Give two causes for post-partum hemorrhage and describe your treatment in each case. 7. (*a*) Name three diseases of the mother in which you would not allow the child to nurse the breast. (*b*) What is Colles' law? 8. At what temperature should a schoolroom be kept? 9. How would you examine a child to determine its physical fitness to enter public school? 10. (*a*) How would you ventilate a sick-room in pneumonia? (*b*) Would you advise a different temperature of the sick-room for a patient with pneumonia and one with typhoid?

MATERIA MEDICA AND PRACTICE

1. What is cresol? Salol? Give uses and action. 2. Give therapeutics of water, hot and cold. 3. Compare the physiologic action of aconite and digitalis. 4. Give etiology and diagnosis of cholelithiasis. 5. Diagnose and treat acute appendicitis. 6. Define cretinism. Give treatment. 7. How do tinctures differ from spirits? Give example of each. 8. Name the principal potassium salts and give use of each. 9. What is the difference between irritants and counterirritants? 10. What diseases most commonly occur in the right inguinal region?

GYNECOLOGY

1. Describe a normal menstruation and state the changes that take place in the uterine mucous membrane. 2. From what must you differentiate an ovarian cyst? 3. Treat pruritus vulvae. 4. What are the causes of pelvic abscess? Outline treatment. 5. Diagnose cancer of cervix. 6. Define pyosalpinx. Endometritis. Vaginismus. Cystocele. 7. Give the causes and treatment of non-specific vaginitis. 8. Give the causes of sterility. 9. Give the causes of metrorrhagia. 10. Treat ulcer of cervix.

PHYSIOLOGY

1. Give origin, distribution and function of phrenic nerve. 2. Give origin of the brachial plexus, and give the origin and function of the median nerve. 3. What agents of digestion change starch into sugar? 4. Locate crypts of Lieberkuhn and tell their function. 5. Define digestion. 6. What is the function of the clitoris? 7. What is the function of the white corpuscles of the blood? 8. Give origin, length and termination of cystic duct. 9. What nerve arises in the floor of aqueduct of Sylvius, is motor in function and supplies all the muscles of the eye except external rectus, superior oblique and orbicularis palpebrarum? 10. Tell where the enlargements of the spinal cord are found and what causes them.

SURGERY

1. What is a dislocation? Define the various kinds of dislocations. 2. What are the complications of dislocation of the hip? 3. Mention the causes of delayed union and give the treatment. 4. In what portion of the base of the skull may fractures lead to the escape of cerebrospinal

fluid? 5. Give the cause, symptoms and treatment of chilblain. 6. What is harelip? 7. How are foreign bodies to be removed from the trachea? 8. Give the technic of a gastro-enterostomy—any one method. 9. Give the treatment of stone in the common duct. 10. What conditions of the kidneys require nephrectomy?

CHEMISTRY

1. What is an element? Name an element that is univalent, bivalent, trivalent and quadrivalent. 2. Give the chemical antidote to silver nitrate; also strychnin poisoning. 3. What is the chemical name and formula for iodoform? 4. What is albumin, and give test for albumin in urine. 5. What is the difference between an atom and molecule? Name the lightest element; the heaviest element; the most precious element. 6. What is allotropism? Amorphism? Endosmosis? 7. Give the characteristics of (*a*) nephritic urine, (*b*) cystitic urine. 8. Complete the equation, $2NaNO_3+H_2SO_4=$? 9. Name the chemical changes in the body after death (not physical). 10. What organic acids are present in vegetables and fruits?

Book Notices

Chemical Pathology; Being a Discussion of General Pathology from the Standpoint of the Chemical Processes Involved. By H. Gideon Wells, Ph.D., M.D., Professor of Pathology in the University of Chicago. Second Edition. Cloth. Price, $3.25 net. Pp. 616. Philadelphia: W. B. Saunders Company, 1914.

When the author wrote this pioneer work on chemical pathology he performed a most timely service. He marshaled from widely scattered sources the existing information about the chemistry of pathologic processes and presented it in an orderly and attractive form. The result no doubt greatly facilitated the study of chemical pathology at the opportune period when it was being realized that further progress in the understanding of pathologic processes had to come through chemical rather than morphologic methods of investigation. Since the first edition was issued (1907) the literature on chemical pathology has received more substantial contributions than in all the previous history of the science. Naturally the consequent changes in views and the added knowledge have necessitated many and radical alterations in the revised edition. This is especially the case in the parts dealing with immunity and the ductless glands. R. T. Woodyatt writes anew the chapter on carbohydrate metabolism and diabetes, subjects which he is especially well qualified to discuss. The book presents the existing state of knowledge with masterly thoroughness, discrimination and clearness. It is a product of genuine scholarship. The reception on its first appearance was uniformly favorable; it quickly became accepted as a reliable and authoritative source of information in regard to its subject and as a useful guide to further study, not only for the student and physician, but also for the investigator in biologic chemistry. The revised edition will enjoy this enviable distinction in even larger measure.

Geriatrics: The Diseases of Old Age and Their Treatment. Including Physiological Old Age, Home and Institutional Care and Medico-Legal Relations. By I. L. Nascher, M.D. Introduction by A. Jacobi, M.D. Cloth. Price, $5 net. Pp. 517, with 81 illustrations. Philadelphia: P. Blakiston's Son & Co., 1914.

The subject discussed in this book is nowhere defined except by antithesis. Old age is compared and contrasted with childhood, but the essential characters that mark off the senile organism are only vaguely outlined. Still Dr. Nascher insists that we cannot deal understandingly with senile diseases if we do not understand the senile organism, and that we cannot understand the senile organism unless we study it as a physiologic entity entirely apart from maturity. He then proceeds to show that "the irregularity in the order and the wide variations in time and extent of the senile changes in different individuals make it impossible to establish a norm or standard for these changes." What then becomes of the entity entirely apart from maturity?

The size of the book precludes an exhaustive analysis. There is much vague statement of hypotheses that produces a sense of confusion in the mind of the reader. For the most part, the diseases of old age are described like the same diseases occurring in middle life. A few sentences suffice to indicate the modifications due to age. As a result the book is burdened with matter which covers the entire field of medicine often given with necessarily insufficient detail, and available in other text-books. One subject Nascher discusses with considerable fulness, namely, the arteriosclerosis of old age. Several theories of the origin of this condition are given, and finally the experiments of Weil are referred to. The theory founded on these experiments is developed at considerable length, the reason given being that there "are favorable reports of a method of treatment based on this theory." (The method of treatment referred to is, we presume, the use of amorphous phosphorus). "Weil," Nascher reports, "found that while the normal daily elimination of CaO through the kidneys was 0.39 gm., in over 50 per cent. of his arteriosclerosis cases, the elimination was less than 0.2 gm. and in no case did it reach the normal, notwithstanding abundant lime introduction. The conclusion is that there is an excessive lime retention with consequent disproportion of salts in the blood. Lime deposits occur late in the disease and this theory does not explain the early degenerative process." No reference is given by Nascher to Weil's article. It may be noted here that the determination of an abnormally small excretion of calcium in the urine affords no ground for concluding that there is retention of calcium, because the greater part of ingested calcium is excreted by the intestine. In representing the character of the old the author is inclined to dwell on the darker lines of the picture and to portray the aged as examples of inconsiderate selfishness, forgetting the many examples of men and women working to advanced age in the interest of humanity, or waiting quietly and uncomplainingly for their discharge from their accomplished warfare. Notwithstanding these defects the author has included a good deal of important information which it may be worth while to extract by a patient reading of the whole book.

Flies in Relation to Disease. Non-Bloodsucking Flies. By G. S. Graham-Smith, M.D., University Lecturer in Hygiene, Cambridge. Cambridge Public Health Series. Cloth. Price, $3.50. Pp. 292, with 32 illustrations. New York: G. P. Putnam's Sons, 1913.

This book is an excellent discussion of the mechanical conveyance of disease germs by non-bloodsucking flies. It is well written, beautifully illustrated, and deals with the subject in a thoroughly interesting fashion. A comprehensive bibliography is appended. One feature that will appeal to practical workers is the definite way in which the gaps in our knowledge are pointed out. The writer clearly shows the insufficiency of the evidence on which are based the extravagant claims made by some popular writers regarding the share of house-flies in spreading disease. The present position of our knowledge is summed up in the statement: "It is certain that the house-fly is a potential disease carrier and a constant frequenter and disseminator of filth, but much remains to be done before Howard's name 'typhoid fly' . . . can be completely justified." Again: "The general evidence relating to the spread of typhoid fever by flies in cities in temperate climates is at present far from conclusive." A few misprints of proper names are noticed, as on page 75, "Glossona" and on page 135, Kartle (for Kastle) and Lennoden (for Lumsden), but in general the proof-reading seems to have been carefully done. Altogether the book launches the new Cambridge Public Health Series most successfully.

A Reference Handbook of the Medical Sciences, Embracing the Entire Range of Scientific and Practical Medicine and Allied Science. By Various Authors. Third Edition. Edited by Thomas Lathrop Stedman, A.M., M.D. Volume 3. Cloth. Price $7 net. Pp. 930 with 665 illustrations. New York: William Wood & Co., 1914.

A striking feature of the present volume is the number of short articles. With the exception of articles relating to the car, which aggregate nearly one hundred pages, the articles on important subjects seldom exceed fifteen pages, many such as that on diabetes mellitus, not reaching ten pages. Though short, the articles are excellent. The illustrations are plentiful, some of them being colored plates.

Medicolegal

Valid Regulations of the Sale of Milk

(Koy vs. City of Chicago et al. (Ill.), 104 N. E. R. 1104)

The Supreme Court of Illinois affirms a decree dismissing for want of equity a bill filed by the plaintiff to restrain the city of Chicago and its officers from revoking licenses issued to him as a milk-dealer, and from interfering with the distribution of milk products by him, and others similarly situated, for failure to comply with certain provisions of an ordinance of the city. The court says that the plaintiff did not question the power of the city to require the pasteurization of milk, but only the reasonableness of requiring the use of the temperature-recording apparatus mentioned in the ordinance. He alleged that he was furnishing clean, pure, and properly pasteurized milk, and that the requirements of the ordinance were no more reasonable than would be a requirement that he should furnish equipment for the city laboratory or pay an inspector for ascertaining whether he was complying with the ordinance. But the court cannot say that the requirements complained of in the ordinance are not adapted to the object sought or are not reasonable.

The regulation of the sale of milk and its products is essential to the preservation of the public health, and authority for its regulation is clearly given to the city council by paragraphs 50, 53, 66 and 78 of Section 1 of Article 5 of the cities and villages act of Illinois. The object of the ordinance is not to benefit persons engaged in the milk business or to enable them to comply with the ordinance in regard to pasteurizing milk, but is to make sure that the milk offered for sale within the city shall be of a quality which will not be detrimental to the public health. The city having power to require milk to be pasteurized is not limited to the imposition of a penalty for a violation of this requirement, but may prescribe the conditions under which the pasteurization shall be done in order to prevent an evasion of the ordinance and insure that the product shall be such as the ordinance requires.

There is no article of food in more general use than milk; none whose impurity or unwholesomeness may more quickly, more widely, and more seriously affect the health of those who use it. The regulation of its sale is an imperative duty which has been universally recognized. This regulation in minute detail is essential, and extends from the health and keeping of the cows which produce the milk, through all the processes of transportation, preservation, and delivery to the consumer. Not only may laws and ordinances require that milk offered for sale shall be pure, wholesome and free from the bacilli of any disease, but they may and do, in order to produce this result, prescribe the manner in which such purity, wholesomeness, and freedom from disease shall be secured and made to appear. The cows may be required to be registered with a designated public authority; the dairies to be conducted and managed according to prescribed regulations, and, together with the dairy utensils, subjected to inspection; the receptacles in which milk is contained to be of prescribed character and capacity; the labels to be placed according to fixed regulations, and to contain certain required information; the milk to be prepared in the manner, at the times, and by the means directed, and at all times to be subject to inspection. These may be drastic restrictions on a private business; but experience and the increasing knowledge of the causes of disease and the agencies of its propagation have demonstrated the necessity of such restrictions to the preservation of the public health. The object of all such restrictions is the preservation of the public health, and as a means to that end the protection of the general public against dishonest vendors of milk. They all impose inconveniences and expense on the dealers in milk, but they are not on that account unreasonable, unjust or oppressive. Legislatures and city councils, in the exercise of the police power, may prohibit all things hurtful to the health and safety of society even though the prohibition invade the right of liberty of property of an individual. If the apparatus required should not record the temperature accurately at all times or should not indicate the length of time the temperature was maintained, or if it can be manipulated so as not to show an accurate record, these are matters for the city council to consider. Courts cannot overrule the determination by the city council that a particular method of protecting the public should be adopted unless it is so clearly and manifestly wrong that there can be no doubt about it. A personal inspection of all milk sold in the city would be manifestly a requirement difficult, if not impossible, to carry out. Even though the recording apparatus may be manipulated by a dishonest dealer so as to show an untrue record, the city council may have thought its use better for the protection of the public than a system by which no record was preserved, but the health officers were compelled to rely wholly on the dealer, and the court cannot say that they were clearly and unmistakably wrong. Whether officers of the health department shall be provided in sufficient number to visit the places where pasteurization takes place between each pasteurization and the next is also a question for the council.

No Charter for Chiropractors' Association

(Appeal of Chiropractors' Association of Pennsylvania (Pa.), 90 Atl. R. 335)

The Supreme Court of Pennsylvania affirms an order refusing an application for a charter for a chiropractors' association. The court declares that it cannot say that the court below was wrong in its conclusion that approval of this application ought to be withheld until the incorporators have attained a legal status under the laws of the commonwealth governing all medical practitioners. After examining the application and considering the testimony taken before a commissioner in support thereof, the court below was unable to approve of the grant of the charter. Several reasons were given. First, it appeared from the report of the commissioner and from the petition that the applicants as "chiropractors" had no legal status under the law of Pennsylvania, and that the main object in procuring the present charter was to give the association a legal status, prior to that which they would endeavor to obtain under the law of the state. This fact of itself, the court said, was a sufficient reason for withholding approval of this charter until the status of the incorporators was recognized and defined by laws. Another reason assigned was the implied purpose of the proposed corporation to create subordinate organizations throughout the state of Pennsylvania subject to the central organization. This, the court felt, was beyond its authority to sanction. A third reason which influenced the court was its inability to ascertain what was meant in the application by the term "chiropractors," or what the real purpose was which was to be effected by the organization. The court said that examination of the testimony of the incorporators gave rise to considerable doubt as to which of the purposes of the act of assembly the incorporators might be chartered under. Its exact position seemed to be doubtful in the minds of the incorporators themselves. One answer seemed to indicate that they were engaged in general practice in the treatment of almost every known disease, which would bring them within the requirements of the laws of the state regulating medical practice.

Reference Changed

The opinion of the Supreme Court of Colorado in the case of *Graeb* vs. *State Board of Medical Examiners et al.* appeared first in the advance sheets of 135 Pacific Reporter, 776. This was given as the legal reference in the Medicolegal Department of The Journal (Jan. 31, 1914, p. 402). For some unexplained reason, however, the decision was omitted from the bound volume of 135 Pacific Reporter, and now appears in the advance sheets of 139 Pacific Reporter, p. 1099. It has to do with the validity of a statute providing for the revocation of licenses of physicians obtaining fees on representations that manifestly incurable diseases can be permanently cured.

Society Proceedings

COMING MEETING

Montana State Medical Association, Lewistown, July 8-9.

AMERICAN PEDIATRIC SOCIETY

Twenty-Sixth Annual Meeting, held in Stockbridge, Mass., May 26-28, 1914

(Continued from page 2050)

The High Caloric Diet in Typhoid of Infants and Young Children

DR. L. E. LAFETRA and DR. LOUIS C. SCHROEDER, New York: Our series comprises 48 cases. The children were fed at intervals of three hours, beginning at 6 a. m. and continuing until 9 p. m. The articles given were very much those prescribed for the child in health, with the exception that the only meat used was creamed chicken. In no case was an exclusive milk diet used. Every patient took cereal in some form. Eggs and toast were offered from the beginning. The number of calories that were actually taken after the first few days and that seemed from a clinical standpoint to have been utilized satisfactorily varied from 100 to 3,000 per kilo of body weight. The urine in these cases seldom showed any traces of indican. It was found that a high range of temperature interfered somewhat with the taking of so much food. The so-called typhoid state occurred in a much smaller proportion of the cases than under the older method of treatment. Abdominal distention was present in only six cases and in only one was it troublesome. Five of the patients had blood in the stools at some time during the course of the disease. In only two instances were the hemorrhages severe enough to cause apprehension. One patient was transfused three times and lost in weight, but during convalescence took the largest amount of food recorded, viz., 8,000 calories in twenty-four hours. There were but three relapses and one recrudescence. During the course of the fever 60 per cent. of the patients gained weight.

DISCUSSION

DR. FRANK S. CHURCHILL, Chicago: Do you think there was any connection between the hemorrhages and the high caloric diet?

DR. CHARLES GILMORE KERLEY, New York: After having had typhoid myself I felt that patients should have a more generous diet and have been following out this plan for several years. The diet I have given is similar to that just advocated, but I have not been allowing meat until the third week. We find much less tympanites after getting away from the milk diet.

DR. JOHN LOVETT MORSE, Boston: I also had typhoid and learned my lesson. With the more liberal diet one does not get the constipated stools that one gets with a milk diet. We are feeding our typhoid patients on a varied diet and try to keep up the calories as high as Dr. LeFetra does. As it is difficult to give the high caloric diet during the febrile period, the feeding of typhoid cases should be divided into two periods, the febrile and the post febrile.

DR. L. E. LAFETRA, New York: As to the effect of the high caloric diet on hemorrhage, the diet was not very high in caloric value at the time of the hemorrhage. When the children are very sick they do not take so much food, but one can gradually work them up to the larger amounts.

The Caloric Value of the Diets of Sick Infants

DR. J. C. GITTINGS, Philadelphia: The caloric value of 125 infants' diets was calculated and compared with two standards—the number of calories required on the basis of the weight on admission to the hospital and the number of calories required by a normal child of the same age and the average height. The percentage of deficiency in caloric requirements based on weight on admission was reasonably small, but the small gain, one-fifth of an ounce a day, for all cases, two-fifths of an ounce for recoveries, suggests that it might have been possible to exceed the caloric minimum with benefit. The complicated atrophy cases showed about the same deficiency as the recoveries, but in the uncomplicated atrophies and in the miscellaneous groups the diet exceeded the minimum requirement and the gain was proportionately large. In the gastro-intestinal group a similar difference was noted, but the uncomplicated cases showed an actual deficiency instead of excess and received less food than careful attention to caloric requirements would have indicated. The tuberculous meningitis patients showed an actual gain in weight because of the forced feeding. The percentage of admission weight deficiency of all cases compared with that of the normal child of the same age was 32 per cent. The percentage of caloric deficiency was 36 per cent. Those cases which showed the greatest deficiency were babies under 3 months of age, and cases of infantile atrophy and gastro-intestinal disease complicated with vomiting, diarrhea or fever.

DISCUSSION

DR. CHARLES HUNTER DUNN, Boston: I have always felt the fallacy of the minimum caloric requirement. We have tabulated the caloric value of the diet taken by about all the infants in our wards and found that the extremes were so great that no conclusions could be drawn from any system of averages that could be of practical value.

DR. HENRY DWIGHT CHAPIN, New York: We have overestimated the value of the caloric method of feeding infants. It is the assimilation of nutrition and not the heat production that is of value. The elements in the food should be in proper proportion and are not interchangeable. In feeding infants we must provide for growth.

DR. ROWLAND G. FREEMAN, New York: Fat babies require less food than the poor marasmus ones.

DR. CHARLES GILMORE KERLEY, New York: Some children require more than the estimated standard. In older children the number of calories required is dependent on activity.

The Feeding of Malnourished Infants with High Proteins and Carbohydrates and Very Low Fat Values

DR. D. J. MILTON MILLER, Atlantic City, N. J.: The successful feeding of cases of malnutrition is by means of human breast-milk, and too much time is wasted in seeking substitutes before wet nursing is resorted to. A number of foods characterized by low fat and high protein and carbohydrate percentages have been tried, such as buttermilk, *Eiweissmilch,* Keller's malt food, etc., and all are applicable for a short period only. The series on which I made my observations belonged to the extremely atrophic and marasmatic class. Skimmed milk formed the basis of the diet with 1.0 to 1.75 per cent. fat. The children were not kept long on a fat-free diet, though the percentage of fat might always be below that of the normal formula. Eleven children were fed on this principle and the results were favorable.

The Results of Low Fats and High Proteids in Cases of Artificial Feeding in Infants

DR. PERCIVAL J. EATON and DR. EDWARD B. WOODS, Pittsburgh: We wish to present a series of cases showing what can be done for infants whose heredity is not of the best and whose environment has been bad. The patients were uniformly in poor condition. Certified milk and gravity cream alone were used. No formulas were pasteurized or sterilized. Dextri-maltose was used in each case and a proper quantity of citrate of soda, about 1 grain to each ounce of milk. When the children were first admitted they were put on barley water and then on defatted milk in small amounts. The milk was added in increasing proportions until a modified milk formula was used. The percentage of fat did not exceed 2.5 per cent. The most important point is that babies fed according to this general plan are less inclined to be ill and have a more stable life as well as very consistent growth.

(Continued on page 131)

COLLEGE OF PHYSICIANS OF PHILADELPHIA

Meeting held May 6, 1914, at 8 P. M.

The President, Dr. James C. Wilson, in the Chair

The Bureau of Child Hygiene of the Department of Health of New York City

Dr. S. Josephine Baker, New York: New York City was the first community to take cognizance of the importance of child welfare work. The Bureau of Child Hygiene was organized late in 1908 as a division of the Sanitary Bureau. The main work was the prevention of disease and the education of the public to do its share. All activities relating to the health of children were coordinated and placed under the bureau's control. The work at present starts with the prenatal care of the child, and intensive studies show a probability of a distinct lessening in infant mortality. The bureau has felt that the unsupervised, uneducated midwife, even at her best, is a distinct source of danger and should be subject to some definite control, and recommended to the board of health a resolution prohibiting any midwife who had not previously practiced from doing so after Jan. 1, 1914, unless she had received a diploma from a school for midwives recognized by the board of health.

Ophthalmia neonatorum has practically disappeared in New York City. Last year about 16,000 babies were under the care of our nurses with a mortality of 1.4 per cent. There are probably about 5,000 babies who at present are not properly cared for, and we hope within the next year to have such an equipment that no baby shall be neglected. Educational publicity has been widely used. Instruction of groups of girls over 12 in the care of babies has been one of the most valuable factors of the work. The point of attack has been the well baby, and our efforts have been directed to keeping the well baby healthy. To secure the fullest efficiency, effective cooperation has been obtained with all infant welfare organizations in the city. Since the organization of the Bureau of Child Hygiene, the death-rate of babies under 1 year of age has been reduced from 144 per thousand births in 1907 to 101.9 in 1913. Of the ten largest cities in the United States, New York ranks second in its low rate of infant mortality, being outdistanced only by St. Louis with its rate of 99.5. The bureau controls the matter of the foundling baby by supervision of homes in which these children are boarded out from the big foundling asylums.

The care of the child before school age is a most difficult problem. The day nurseries and orphan asylums of the city are under the control of the bureau. The main care of the child from 5 to 15 years falls within the work which is known as the medical inspection and examination of schoolchildren. Since the organization of the bureau it has not been necessary to close any public school in New York City because of an epidemic of contagious disease. Our methods are those of prevention with the exclusion from school of any child presenting premonitory symptoms of a contagious illness. In the most congested parts of New York it is difficult to discover cases of ringworm, scabies or impetigo. Trachoma has been reduced from 20 to 3 per cent. In 1909, 13.1 per cent. of the children examined had defective vision; in 1913 this was reduced to 8.5 per cent. The percentage of defective nasal breathing has decreased from 18.7 per cent. in 1909, to 8.9 per cent. in 1913. Adequate systems of ventilation have not yet been put into effect in the New York schools. This matter is under the control of the board of education. It is hoped that all schools will soon recognize the value of the open-window class.

The enforcement of that part of the child labor law relating to the issuance of employment certificates falls naturally as the last of the bureau's activities. The year previous to the organization of the bureau, but one child was refused an employment certificate because of physical inability. Last year, practically 600 were refused outright and nearly double that number had their applications held pending their obtaining the necessary care to secure good health. When we allow children to work we believe it is the duty of the community to see that they are physically able, and that their work may not react injuriously on them at the most important stage in their development. The bureau has 705 employees, including physicians and nurses. Its budget appropriation for 1913 was $652,000. It is the youngest and the largest bureau of the department of health. The results of its five years' work show that it is possible for any community to have a constructive program for the health of children, and that such a program to be effective must be founded on the idea of educational hygiene in preventive medicine.

Municipal Sanitation

Mr. M. N. Baker, president Board of Health, Montclair, N. J.: Broadly, municipal sanitation embraces all those works or activities which it is the duty of the city to conduct or regulate in the interest of public health. By a municipal program I mean not merely the planning of a city's activities for a single year but for many years to come, all with careful regard to the city's financial resources. Current practice in most American cities consists altogether too much in considering each division of municipal activity entirely by itself without regard to the other financial needs of the city. The result often is that the activity which has the most able orator, or whose administrative head has most political influence or backing, gets an undue share of the municipal funds, while other activities suffer accordingly. We must measure relative values in the field of public sanitation by vital statistics which, applied impartially and intelligently to the whole field, show that many lines of endeavor classed as sanitary must seek their justification chiefly from serving other than health protective functions.

When the promotion of public health is being considered, far greater weight should be given to water purification than to sewage treatment. While water purification purifies, sewage purification does not, so far as the removal of the germs of communicable disease is concerned. Sewage purification is a misnomer. A clear-cut distinction should be made between municipal health on the one hand, and municipal cleansing or some other form of decency or convenience on the other. In my opinion, the work of municipal boards of health should be confined almost wholly to direct measures for the control of communicable and perhaps occupational diseases, to the reduction of infant mortality extended to cover child hygiene, and to certain regulatory and educational work designed to promote general health. With a proper delimitation of the work of health departments so as to exclude all responsibility for the construction and operation of cleansing and other municipal work, which can best be entrusted to the engineer, and with the great improvements which have recently taken place in medical education, the medical rather than the engineering schools should be drawn on for the vast majority of health officers; but the medical schools are not yet equipped and probably never will be equipped to give, nor do medical students have time to take, all the instruction needed to make a good health officer. Fortunately, a number of schools of public health have been started during the past few years, which will meet in large measure the increasing demand for specific training to health officers.

DISCUSSION

Dr. A. C. Abbott: I do not believe that those of us living in Philadelphia realize what it has meant for New York to accomplish the results that have been laid before us. In that city there is an area more densely populated than any other known spot on earth, and in twenty-six years there has been a reduction of mortality among children under 1 year of age of over 50 per cent. They are far ahead of us in New York on the matter of saving infant life. We are glad to be told that good health is purchasable. When one decides to purchase a thing or a condition, one must not have in mind the purchasing of all outdoors. One should contemplate that which can be paid for. Mr. Baker has clearly indicated this idea. The prevention of illness is the function of our health authorities and should come first. The activities of our health boards in matters of general sanitation are diverting energies from the more important phase of health work. At the University of Pennsylvania, we have been offering instruction in public hygiene since 1906. Our effort is not to train specialists but to give the student a comprehensive understanding of the many-sided problem. It is significant of the spirit of the times that several other important educational institutions are also offering instruction in problems of public health. A health officer should have a medical training, because he is dependent on the professional men of the community for support, and he is much more apt to get it if he has had medical training, and is in sympathy with medical ideals. The man who has had, in addition to medical training, special instruction in public hygiene, is a much better health officer than he who has not.

SOUTH DAKOTA STATE MEDICAL ASSOCIATION

Thirty-Third Annual Session held at Watertown, May 26-28, 1914

The President, DR. F. A. SPAFFORD, Flandreau, in the Chair

Nervous Symptoms in Nephritis

DR. E. H. GROVE, Hetland: I saw a case of nephritis in which the prominent symptom was persistent uncontrollable vomiting without nausea. The vomiting was hysteric in type; when under close observation the patient was kept from vomiting; when in bed she did not vomit. Her general health and nutrition had remained good.

DISCUSSION

DR. T. J. BILLION, Sioux Falls: The vomiting in this case corresponds with cerebral or hysteric vomiting. I really think the well-preserved condition of the patient and the character of the vomiting are suggestive of hysteria. I have not been able to find any other condition that would cause the vomiting.

DR. HENRY L. ULRICH, Minneapolis: Nephritis means not only a change in the metabolism, but a chromatolysis of the nerve centers, sensory or motor. I do not think that in subacute nephritis the symptom of nausea is an absolute essential to cause vomiting. A patient can have vomiting without nausea. We are beginning to think that every acute nephritis is of infective origin. The kidney is not alone at fault; we must consider other organs, particularly the liver. Take the cases of hypertension, with slight evidences of nephritis: we cannot blame the kidney for the retention of toxic products alone. There must be some changes in the metabolism which cause the hypertension products and which, in turn, are causing the high blood-pressure. In regard to vomiting, we are dealing with a chromatolysis due to malnutrition of nerve-cells, and whether this malnutrition is due to liver metabolism, to stomach, intestinal lining, or digestive metabolism, we do not know.

DR. G. EUSTERMAN, Rochester, Minn.: In all cases of chronic intoxication we have a symptom-complex which runs more or less parallel with cases of hyperthyroidism. These symptoms may simulate the intoxication which is associated with Bright's disease. Very frequently patients present themselves with the symptoms characteristic of exophthalmic goiter. In other words, we are dealing with a chronic intoxication, with perhaps parenchymatous degeneration of the kidney and liver, which intoxication results in a similar train of symptoms. It is very important to be sure of excluding chronic Bright's disease in a certain percentage of these cases, and we have been surprised in making a careful examination of the twenty-four-hour specimen of urine and the condition of the blood and the blood-pressure and eye-grounds, to find we were not dealing with exophthalmic goiter, but with a chronic glomerular or interstitial nephritis.

DR. S. M. HOHF, Yankton: The more I study the subject of nephritis, the more I am convinced that the old theory of the etiology of the disease is not based on sound principles. Bright's disease means no more to me than a headache. I am convinced that the nephritides are due to some central nerve disturbance, because frequently the condition present in the kidney is one in which we find high blood-tension and cardiovascular disturbances. These are due not always to nutritional disturbances, but may be found in persons who are under constant high nerve-tension.

Afebrile Convulsions in Infancy and Early Childhood

DR. F. W. SCHULTZ, Minneapolis: The convulsions and similar manifestations develop on the basis of congenital neuropathic and psychopathic constitutions. Favorable conditions make them more manifest. These are, first, feeding. A breast-fed child is almost immune; only the artificially fed are very liable. Second, disorders of nutrition, quantitative (overfeeding), qualitative (one-sided feeding with milk or farinas, and acute intestinal disorders favor the development). Third, season of the year. The condition manifests itself particularly during the winter and spring months and abates or ceases altogether during the summer and fall months. Fourth, intercurrent febrile affections, like grip, pneumonia, etc., precipitate active manifestations. Fifth, the age of the child. From the third month up to the second year the condition is very common. Under eight weeks, spasmophilia can be ruled out. Spasmophilic convulsions can occur after the third year. We have, then, conditions similar to the tetany of adults. Sixth, hereditary and familial tendencies, which are predisposing factors. In this condition, as in epilepsy, teething and intestinal parasites have no bearing on either the cause or development of the disease. Spasmophilic convulsions consist of tonic contractions of the muscles of the face and extremities. They lead eventually to clonic convulsions.

The food for the spasmophilic child under 1 year should be breast-milk. Over 1 year the food for a long period should consist exclusively of carbohydrates. Cow's milk and a fat, rich food seem to have a specific unfavorable effect. It is well to exclude some of the meat, especially beef, from the diet. The brusque attack of convulsions is almost immediately controlled, certainly favorably influenced, by starvation, combined with a vigorous sedative, as, for example, chloral hydrate, 1 gm. by rectum, repeated at intervals, if necessary. Following this treatment, the child is placed on a strict, prolonged carbohydrate regimen combined with the phosphorus-cod-liver-oil therapy first advocated by Kassowitz. The use of calcium salts in this condition is of doubtful value. If any are used, calcium bromid should have the preference. If the dietetic regimen is carefully carried out, the child will be free for life from convulsions and most, if not all, the spasmophilic symptoms.

DISCUSSION

DR. J. M. FREEBERG, Watertown: Most of the convulsions that we see in these cases unquestionably come from infection or from an effect on the cortical cells of toxins in the system. If the case is of the fever type, the cause is most apt to be from the alimentary system.

DR. HENRY L. ULRICH, Minneapolis: At present it is held that asthma, hay-fever, pylorospasm and laryngospasm may be due to hypersensibility to proteins. In spasmophilics the conclusion is in favor of this being a hypersensibility reaction. It never occurs, as a rule, in breast-fed infants. Take the spasmophilic child off of cow's milk and the spasmophilia disappears. Recent experiments in rabbits show that hypersensibility to casein will produce the same reaction as in spasmophilics.

DR. PERCY D. PEABODY, Webster: Following this regulation diet, is there a change in the electrical reaction toward the normal in these subjects, or is there a diminution in the symptoms?

DR. F. W. SCHULTZ: It is singular that spasmophilics cannot have carbohydrates exclusively. Some cases of spasmophilia arise from carbohydrate feeding, and when we reverse the food and put the patients on different milk, we check it in that way. The reactions change to normal if the proper diet is carried out. With the phosphorus-cod-l you can have the child return to a normal state with the reactions and everything.

Emergency Surgery in Country Practice

Dr. M. M. Grove, Dell Rapids: The important factors in successful emergency surgery are: (1) to establish early diagnosis by careful and thorough examination; (2) good judgment in the choice of operation and necessary skill in its performance; (3) familiarity with the technic best adapted to the case; (4) favorable surroundings; (5) free drainage in all cases in which any chance of infection is possible, and (6) last but not least, the use of a little common sense. Unless one is familiar with the proper technic and has shown the necessary skill in doing major surgery under favorable conditions, he is not justified in attempting major emergency work under adverse conditions.

Lesions of the Urinary Tract Produced by Disease of the Genital Tract in the Female

Dr. A. C. Stokes, Omaha: Hydronephrosis must be regarded as of mechanical origin in the great majority of cases, and except in a few instances of congenital origin may be traced to malpositions, strictures, stones or inflammations obstructing the ureter or the pelvis of the kidney. With the advent of the cystoscope and the use of bismuth and wire ureteral catheters we have shown that malpositions of the ureter are not uncommon; also, that a certain number of these conditions originate from pelvic inflammations, displacements and growths. Hydronephrosis is one of the most commonly overlooked conditions with which we deal. Its symptoms are often regarded either of no particular moment and dismissed by the physician, or they are placed at the door of the appendix, the gall-bladder, the stomach or colon.

(To be continued)

Current Medical Literature

AMERICAN

Titles marked with an asterisk (*) are abstracted below.

Albany (N. Y.) Medical Annals

May, XXXV, No. 5, pp. 243-302

1 *Treatment of Parasyphilitic Nervous Diseases and Late Syphilitic Nervous Manifestations by Intraspinous Therapy. A. Krida, Schenectady.
2 Saratoga and Its Mineral Waters. A. W. Ferris, Saratoga Springs.
3 Bender Hygienic Laboratory. H. S. Bernstein, Albany.
4 Laboratory Diagnosis of Syphilis of Nervous System. H. P. Carpenter, Poughkeepsie.

June, No. 6, pp. 303-350

5 Psychosis of Adolescence. J. M. Mosher, Albany.
6 Abdominal Symptoms. D. C. Moriarta, Saratoga Springs.
7 Medical Inspection and Examination of Schoolchildren. P. V. Winslow, Wappinger's Falls.

1. **Parasyphilitic Nervous Diseases.**—Clinically, of 8 cases of tabes treated by Krida, 4 were improved, 4 were unimproved. Of the latter, 3 had Charcot's joint lesions, and were of the most unsatisfactory type to treat; the fourth, had there been opportunity for further observation and treatment, Krida says, might well have responded to subsequent injections. In the cases of general paresis, the focal symptoms yielded quite promptly to treatment, while the mental condition was but little influenced. The septic paraplegias presented the most definite clinical improvement, every case being favorably influenced. From the laboratory standpoint, changes in the 3 reactions in the spinal fluid: cystosis, protein content, and Wassermann reaction, in contradistinction to the favorable outcome in the large majority of the reported cases, were more resistant to treatment, and did not keep pace with the clinical improvement. In only 1 case did a positive Wassermann reaction become even temporarily negative.

Among the other cases, there were several in which one or more of the three reactions were not pathologic or where subsequent comparisons could not be made for various reasons. Excluding these, there were 12 cases that had strongly positive Wassermann reactions. In 4 the reaction was diminished in intensity; in 7 it was practically uninfluenced. Of 13 cases the cytosis was greatly diminished in 6, and only moderately diminished or uninfluenced in 7. Of 10 reduced to normal in 6, and diminished in 4.

Archives of Diagnosis, New York

April, VII, No. 2, pp. 101-200

8 Living Pathology. J. B. Deaver, Philadelphia.
9 *Fundamental Considerations in Differentiation of Gastric Neurosis from Organic Abdominal Disease. H. Z. Giffin, Rochester, Minn.
10 Carcinoma of Stomach with Acute Onset. Importance of Recognizing Early Symptoms of Disease. E. H. Goodman, Philadelphia.
11 Abdominal Rigidity. J. N. Hall, Denver.
12 Diagnosis of Malignancy. J. C. Stewart, Minneapolis.
13 Ante-Mortem and Post-Mortem Diagnosis. A. L. Benedict, Buffalo.
14 *Macroscopic Differential Diagnosis between Tuberculosis and Papilloma of Peritoneum. R. T. Morris, New York.
15 *Valuable Diagnostic and Prognostic Signs in Chorea of Children. H. Heiman, New York.
16 Mixed Infections in Tuberculosis. L. C. Ager, Brooklyn.
17 *Hitherto Undescribed Sign in Diagnosis of Chronic Uremia. T. F. Reilly, New York.
18 Case of Complete Heart-Block, with Post-Mortem Findings. R. D. Rudolf and G. W. Loughead, Toronto.
19 Anencephalia: with Special Reference to an Important Etiologic Factor. A. Gordon, Philadelphia.
20 Study of Deformity Curves in Tuberculosis of Spine, with Special Reference to Operative Procedure. W. Truslow, Brooklyn.

9. **Gastric Neurosis from Organic Abdominal Disease.**—Giffin states that it is the common experience of large surgical clinics that too many patients suffering from various types of abdominal and pelvic neurosis have been advised to undergo surgical treatment and the greatest number of mistakes is apparently made in connection with those cases in which the diagnosis and prognosis should not be difficult. On the other hand, most searching examinations are often required in cases which, at the first examination, appear to be neurotic, in order to avoid the occasional mistake of not recognizing an abdominal lesion. Cases of gastric neurosis demand a very general kind of consideration. Important general factors which enter into this consideration are: 1. The analysis and grouping of those symptoms referable to hypersensitiveness and instability of the nervous system; 2. The careful exclusion of those diseases which, in a reflex manner, so commonly produce an indigestion of the functional type; 3. The realization that variability, both in the story that the patient tells and in the symptoms from time to time, is most important; 4. The application of the Roentgen findings; 5. The recognition of certain psychic elements; 6. A review of these data in the light of the personal and family history of the patient.

14. **Peritoneal Papilloma and Tuberculosis.**—A certain number of cases of tuberculosis of the peritoneum present macroscopic characteristics which are very different from those of the familiar miliary tuberculosis of the peritoneum. Morris cites a case in which on opening the peritoneal cavity it was found that various loops of bowel thickened with interstitial infiltrates were so massed together by adhesions that it was impossible to approach the pelvic cavity without tearing fragile bowel walls. Free peritoneal surface was studded with large elevated masses of neoplastic deposit, but without accompanying areas of acute inflammatory character. Morris' diagnosis was that of malignant papilloma, and a prognosis to the effect that the patient had a very short time to live. A drain was inserted and the abdomen closed. About a year later he happened to meet one of the consultants in the case and ask how long the patient had lived. He replied that she was quite well, and gained twenty or thirty pounds in weight and that her cure had been ascribed to Christian Science.

Morris' opinion having been accepted as final from responsible medical sources, the family had yielded to the importunities of friends and allowed the patient to be cared for by Christian Scientists. Up to this time Morris had been so sure of the diagnosis of malignant papilloma that the specimen which had been placed in a bottle of alcohol had not even been examined. The specimen on being examined showed that characteristic feature of tuberculosis. Recovery had apparently occurred in the ordinary way through hyperleukocytosis excited by the opening of the peritoneal cavity.

15. **Diagnostic and Prognostic Sign in Chorea.**—The sign described by Heiman may be produced in the following manner: the palm of the patient's left hand is placed on the palmar surface of the observer's right hand. Then the thumb of the patient is embraced by the index and middle fingers of the physician and the other four fingers firmly grasped by the remaining fingers of the examiner. The right hand of the patient is similarly grasped by the left hand of the physician. The attention of the patient is then invited by asking him a simple question, for instance, his name, age, address, etc., at the same time having him look directly into the eyes of the examiner. If the patient has chorea, the twitchings of the hands will be distinctly augmented each time his attention is engaged by the mental concentration required to answer a question. The firmer grasp the observer has on the patient, and the more he is able to disengage the patient's attention from the examination, the more surely will he be able to discern the finer muscular twitchings indicative of the early stage of chorea. This test is said to be very delicate and is often present when choreic movements of the extremities cannot be seen.

17. **New Sign in Chronic Uremia.**—Reilly found that in very many cases of high arterial tension without any digestive symptoms, a sense of bad taste would occur, often antedating other symptoms by months. The patient rarely complains of it because he thinks that it only represents an upset stomach. In forty cases of high arterial tension associated with other signs of nephritis, seen within the last year thirty had experienced the symptom for a greater or lesser period of time. As a rule, the complaint in the beginning was restricted to the time shortly after awakening in the morning, and disappeared first on washing the mouth, and later only after breakfast. Then it might disappear entirely for a few weeks to reappear later on. In this way it closely resembles the severe uremic headache so characteristic of the early morning hours. In other cases, the bad taste was complained of after exertion or at the close of the day when the patient was fatigued. The bad taste diminishes and disappears just in proportion as the general underlying condition improves. In general it may be stated that the more constantly it is present, the worse the prognosis.

Archives of Pediatrics, New York

May, XXXI, No. 5, pp. 321-400

21 *Pneumococcic Meningitis and Meningismus. Report of Cases. F. Huber, New York.
22 Case of Gaucher's Disease in Boy Thirteen Years of Age. Splenectomy with Recovery. C. Herrman, H. Roth and E. P. Bernstein, New York.
23 Organization of an Out-Patient Clinic. R. M. Smith, Boston.
24 Care of New-Born. C. G. Leo-Wolf, Buffalo.
25 *Case of Anorexia Nervosa in an Infant. N. G. Orchard, Rochester.
26 Chondrodystrophia Fetalis. J. K. Young, Philadelphia.

21. **Pneumococcic Meningitis and Meningismus.**—The four cases detailed by Huber present a number of special features in common. The well-marked cerebral symptoms with coma, the cerebrospinal fluid being free from bacteria were striking. The presence of eye symptoms, etc., rendered the diagnosis less difficult. From a study of pneumococcus infection, Huber says, it is evident that the underlying anatomic changes inducing the cerebral manifestations in the class of pneumonia discussed vary within wide limits. We may have a well-developed meningitis or meningo-encephalitis without any focal symptoms; that is, when the process involves the so-called silent areas in the brain. On the other hand, we may have cerebral disturbance equally pronounced, in which the post-mortem findings are limited to a leukocytic and lymphocytic infiltration with slight edema of the involved parts of the brain and meninges. The pneumococci are found in the spinal fluid in cases in which the entire cerebrospinal canal is involved. Localized meningitis or meningo-encephalitis with or without a plastic exudate reveals the organism at the local seat of trouble, the cerebrospinal tract not being involved as a whole in the process. In practice, therefore, it is essential that the clinical history be taken into consideration — for lumbar puncture may not throw any light on the case. A negative result is not conclusive; only positive findings are of value.

25. **Case of Anorexia Nervosa in Infant.**—A healthy infant, unincumbered by parental taint, manifested a determination not to take food. So far as could be determined the sole cause was the substitution of a new nipple for an old one. A persistent refusal to take any food offered in any manner resulted in a loss of nearly three pounds. Added to this was the lack of any organic lesion to explain the disease. Gavage lasting four days, was followed by a gradual surrender on the part of the infant.

Arizona Medical Journal, Phoenix

May, II, No. 4, pp. 5-23

27 Carcinoma of Cervix. J. T. Stoddard, Pueblo, Colo.
28 Treatment of Pneumonia. J. J. P. Armstrong, Douglas.
29 Subparietal Rupture of Kidney. J. M. Pearson, Glendale.
30 Syphilis, Prophylaxis and Treatment. W. G. Bryan, Bisbee.

Boston Medical and Surgical Journal

June 11, CLXX, No. 24, pp. 897-936

31 Present Status of Psycho-Analysis. J. J. Putnam, Boston.
32 Some Personal Results in Psycho-Analysis and Future of Psychotherapy. L. P. Clark, New York.
33 Indications for Operation on Seminal Vesicles. J. B. Squier, New York.
34 Cancer of Uterus. F. Cobb, Boston.

Bulletin of Johns Hopkins Hospital, Baltimore

June, XXV, No. 280, pp. 165-194

35 *Continuous Propagation of Amebic Dysentery in Animals. W. A. Baetjer and A. W. Sellards, Baltimore.
36 *Blood-Picture in Hodgkin's Disease. C. H. Bunting, Madison, Wis.
37 *Hodgkin's Disease. C. H. Bunting, Madison, Wis.
38 *Clinical Consideration of Hodgkin's Disease. J. L. Yates, Milwaukee, Wis.
39 Charles Bell: His Artistic Qualities. E. R. Corson, Savannah, Ga.

35. **Propagation of Amebic Dysentery in Animals.**—Two strains of amebic dysentery were investigated by Baetjer and Sellards with the object of securing continuous propagation by subinoculation through a series of animals. The first strain was lost in the second passage by accident. The second strain was carried through eleven successive passages in kittens. This strain increased in virulence and no degenerative changes appeared in the morphology of the entameba obtained at the site of active lesions. The characteristics of the clinical course and pathologic lesions were retained throughout the eleven passages. The propagation proved to be considerably complicated by the virulence of the accompanying bacteria. The successful propagation of one strain through eleven passages in animals, with an increase in virulence of the entameba and a retention of the typical features of their morphology, is in conformity with the general laws of protozoan and bacterial infections. The authors consider that the general behavior of this strain of amebic dysentery will prove to be typical of this species and that entameba histolytica will conform to the general rules of parasitology in regard to the subinoculation of a susceptible species of animals, especially with regard to the retention of virulence, through at least a moderate number of passages.

36. **Blood-Picture in Hodgkin's Disease.**—The series of cases studied by Bunting includes fifteen males and ten females, a somewhat higher percentage of the latter sex than is usually given. It is further rather striking that the great majority of the males are under the 33d year, while the majority of the females are above that age. The study of the blood in these cases has shown that there is a deviation from the normal leukocytic picture in all cases, but that there is not a single constant picture found in them. Instead, it is possible to divide the cases into two

distinct groups according to the differential count of the leukocytes. The first group, including cases of a year or less in duration, shows a normal or slightly increased total leukocyte count with a normal or decreased percentage of polymorphonuclear neutrophils.

The second group includes the cases of greater duration, for the most part, and shows a sharp leukocytosis, running in one case (as far as could be determined from the smear ratio of one white cell to twenty-nine red cells) to at least 100,000 leukocytes per cubic millimeter. This leukocytosis is accompanied by an increase of the neutrophils to a percentage between 72 and 90—a percentage not ordinarily considered of value in diagnosing a suppurative process in the body, yet occurring in Hodgkin's disease in the complete absence of pus formation. Throughout the disease there are two constant features, an increase in blood-platelets and an absolute increase in the transitional leukocytes. In regard to the other elements, in early cases there is a transitory increase in lymphocytes and basophils, and a deficiency in eosinophils, with a normal or low neutrophil count, followed by a gradual decrease in lymphocytes and a moderate eosinophilia. In late cases there is a marked neutrophil leukocytosis and a diminution in percentage in all other elements except the transitional leukocyte. All of these features of the blood-picture in Hodgkin's disease have been reproduced in the monkey following inoculation with the diphtheroid organism isolated from cases of the disease.

37. **Hodgkin's Disease.**—Hodgkin's disease Bunting claims is an infectious disease due to a diphtheroid organism, the *Bacterium hodgkini*. There may often be found a primary lesion at the portal of entry. While in some cases the organisms may remain for a long time localized in the vicinity of the portal of entry, in other cases they early gain entrance into the general circulation, and may be widely distributed. The organism and its toxin show a special affinity for lymphoid tissue, and produce in this the characteristic changes of Hodgkin's disease, changes varying somewhat according to the intensity of the toxin but resulting ultimately in the sclerosis of the glands. There is at the same time an interglandular inflammatory process, at times very acute, but resulting finally in a dense sclerotic tissue. There are also characteristic blood changes in the disease. The glandular changes can then be considered only as the result of a toxic action, and contribute to the patient's death merely incidentally, when certain gland groups are extensively enlarged. The cells of the enlarged glands, though atypical, show none of the antagonism to the other body cells characteristic of malignant neoplasms.

38. **Clinical Consideration of Hodgkin's Disease.**—Hodgkin's disease Yates regards as a localized process, susceptible of cure when properly treated as a malign, though chronic infection. It may persist for years without manifesting itself save in the blood-picture so that cures may not be assumed until after an uninterrupted duration of years of persistently normal conditions. A sovereign remedy for all cases is not now conceivable. At present the greatest need is some therapeutic agency to control glands not directly accessible; for once extension, which may occur early, has reached either the thorax or abdomen the prognosis becomes relatively, if not absolutely, hopeless.

California State Journal of Medicine, San Francisco

June, XII, No. 6, pp. 219-262

40 Social and Industrial Insurance. F. C. E. Mattison, Pasadena.
41 Ununited Fractures. J. T. Watkins, San Francisco.
42 Los Angeles Deaths from Intraspinal Neosalvarsan Injections. E. S. May, Oakland.
43 Intracranial Complications Following Abscess in Middle Ear. A. Baer, San Francisco.

Canadian Medical Association Journal, Toronto

June, IV, No. 6, pp. 469-564

44 Development of Obstetrics. B. P. Watson, Toronto.
45 Hemorrhagic Diseases. J. W. McIntosh, Vancouver.
46 Roentgenoscopy in Diagnosis of Gastric Ulcer. W. A. Wilkins, Montreal.
47 *Traumatic Asphyxia. Report of Six Cases. L. B. Robertson, Toronto.
48 Four Cases of Thrombosis of Lateral Sinus with Recovery. G. H. Mathewson, Montreal.

47. **Traumatic Asphyxia.**—All of the cases reported by Robertson were admitted to Bellevue Hospital on the evening of Feb. 2, 1913, having sustained their injuries in a stampede from a moving picture theater after a cry of "fire" had been raised. The condition is usually produced by pressure about the abdomen and chest persisting long enough to cause a cessation of respiration for an appreciable length of time. In a typical case the patient may be unconscious if seen immediately or shortly after the injury. Cyanosis of the scalp, face, neck and chest down to the third or fourth rib anteriorly is present. The lips and tongue may be somewhat swollen and together with the mucous membranes exhibit the same purplish tint as the skin. The discoloration extends just over the prominence of the shoulders, and for a short distance down the back, sometimes even outlining the double triangle of the lower portion of the trapezius muscle. Closer examination of this discolored area reveals the presence of more or less scattered petechial hemorrhages.

A prominent and sometimes startling feature is the subconjunctival hemorrhage. The cyanosis and hemorrhage obtain only in the upper part of the body, apparently on account of the lack of competent valves in the veins of this region, and in support of this explanation it has been shown that the veins of the neck can be injected in a direction against the blood-stream with comparative ease, while considerable difficulty is encountered if this is attempted in the veins of the arm or leg. The infrequency of cerebral hemorrhage is explained by the support given to the blood-vessels of the brain and meninges by the intracranial pressure, analogous to the support of the retinal vessels by the intra-ocular pressure. External pressure on the skin sufficient to give support to the superficial capillaries will also prevent distension or rupture of the latter. The discoloration of the skin is due to the mechanical over-distension of the vessels with resultant stasis and hemorrhages from the small capillaries.

The only treatment given by Robertson, apart from that indicated for the associated injuries, was rest in bed, light diet and sedatives for the nervous reaction which followed the shock of the injury. In two cases showing pulmonary conditions the therapy usual in such conditions was carried out. Only two deaths occurred in this series — the result of pneumonia.

Illinois Medical Journal, Chicago

June, XXV, No. 6, pp. 357-419

49 Increasing Death-Rate in People Past Middle Life and Possibility of Its Reduction. C. J. Whalen, Chicago.
50 Roentgenography in Diagnosis of Diseases of Children. J. P. Sedgwick, Minneapolis.
51 Appendicitis in Infancy. G. E. Baxter, Chicago.
52 Bovine Tuberculosis. M. P. Ravenel, Madison, Wis.
53 *Silver Dento-Maxillary* Splint. W. J. Thompson, Chicago.
54 Infant-Feeding in Earlier Months. A. H. Roler, Evanston.
55 Intravenous Medication. A. F. Stotts, Galesburg.
56 Intravenous Administration of Salvarsan in Treatment of Syphilis. C. A. Buswell, Chicago.
57 Recent Advances in Our Knowledge of Pertussis. J. R. Gerstley, Chicago.

Journal of Biological Chemistry, Baltimore

June, XVIII, No. 1, pp. 1-132

58 Nutritive Properties of Proteins of Maize Kernel. T. B. Osborne and L. B. Mendel, New Haven, Conn.
59 Comparative Chemistry of Muscle: Betain from Scallop, Periwinkle and Lamprey: Creatin from Lamprey. D. W. Wilson, New Haven, Conn.
60 *Certain New Principles Concerning Mechanism of Hyperglycemia and Glycosuria. A. A. Epstein and G. Baehr, New York.
61 Formation of Amino- and Hydroxy-Acids from Glyoxals in Animal Organism. H. D. Dakin and H. W. Dudley, New York.
62 *Urea: Its Distribution in and Elimination from Body. E. K. Marshall, Jr., and D. M. Davis, Baltimore.
63 Chemistry of Gluconeogenesis. VIII. Velocity of Formation and Elimination of Glucose by Diabetic Animals. A. I. Ringer and E. M. Frankel, Philadelphia.

64 *Studies of Carbohydrate Metabolism. VI. Influence of Thyreoparathyroidectomy on Sugar Content of Blood and Glycogen Content of Liver. F. P. Underhill and N. R. Blatherwick, New Haven, Conn.
65 Formation of Benzoyl Carbinol and Other Substances from Phenyl Glyoxal by Action of Fermenting Yeast. H. D. Dakin, New York.
66 *Suppression of Growth and Capacity to Grow. T. B. Osborne and L. B. Mendel, New Haven, Conn.
67 Metabolism of Endogenous and Exogenous Purines in Monkey. A. Hunter, Ithaca, N. Y.
68 *Formation of Glucose from Citric Acid in Diabetes Mellitus and Phlorhizin Glycosuria. I. Greenwald, New York.
69 On Chondroitin Sulphuric Acid. P. A. Levene and F. B. La Forge, New York.
70 Non-Interference of "Ptomaines" with Certain Tests for Morphin. J. Rosenbloom, Pittsburgh.

60. **Hyperglycemia following Hemorrhage.**—Contrary to Bang's opinion, the observations made by Epstein and Baehr seem to demonstrate that the hyperglycemia following simple bleeding is not merely psychic, but that it is a compensatory response on the part of the organism to keep the total blood-sugar up to a level commensurate with the needs of the tissues. In view of the diminished blood volume this is accomplished by an increase in the concentration. Similarly, if the total volume of fluid in circulation be not diminished, the blood withdrawn being immediately replaced by saline solution, the percentage concentration of the diluted blood rapidly rises (with occasional exceptions) to what it was before the experiment. In other words the total sugar in the circulation remains unchanged. It would seem therefore that at least under such conditions as in the experiments, cited an increase in the percentage of sugar in the blood is only indicative of a relative, that is to say percentile, but not of an absolute hyperglycemia.

The experiments suggest very strongly that glycosuria is the result of an absolute hyperglycemia and need not occur when the hyperglycemia is only relative. This would help explain the presence in certain individuals of glycosuria without hyperglycemia, and conversely the absence of glycosuria when hyperglycemia is present. The authors suggest the advisability of studying blood volumes and computing therefrom the total blood-sugar in cases of diabetes mellitus, for therein may lie the explanation for the disproportion between the degree of hyperglycemia and the intensity of the glycosuria, which occurs so frequently in this condition.

62. **Distribution and Elimination of Urea.**—The conclusions drawn by Marshall and Davis from their experiments are: Urea is present in all the organs and tissues of normal animals. The urea content of all organs and tissues is approximately uniform, and approximately equal to that of the blood, both in normal conditions and when there is an abnormally large amount of urea present. Exceptions to this rule are fat, which has a low content, and the urinary tract, which has a high content. When urea in solution is injected intravenously, it diffuses to all parts of the body almost instantly, the diffusion being complete in a few minutes. Urea is eliminated very rapidly by the kidneys; the rate of excretion may rise to 16 gm. per kilo of body weight per day, or much higher. The rate of excretion of urea in normal animals is directly proportional to the concentration of urea in the blood; it may be retarded, however, by dehydration of the organism. When excretion of urea is prevented, the entire amount formed is stored in the body—except small amounts secreted in the bile, sweat, etc.—and there is no evidence of the conversion of urea into other substances.

64. **Thyreoparathyroidectomy.**—Underhill and Blatherwick report experiments, the results of which demonstrate that the thyroid-parathyroid mechanism stands in an intimate connection with carbohydrate metabolism. It is also indicated that the parathyroids are the active agents of the mechanism under discussion. Their experiments show that during the tetany which develops after thyreoparathyroidectomy glycogen entirely disappears from the liver and blood-sugar content is markedly lowered or may even be reduced to zero. It is also indicated that this action may be ascribed to the lack of parathyroid tissue since the phenomena may be observed when all the parathyroids are removed and some thyroid tissue remains. The reverse operation, that of removing the thyroids and leaving the parathyroids intact, has not been carried through in the present investigation since there is little to indicate that any abnormal effect would be produced inasmuch as dogs in their laboratory have lived with four parathyroids only for two years without visible metabolic disturbances. The data yielded after thyreoparathyroidectomy resemble closely those obtained as a result of phosphorus and hydrazin poisoning.

66. **Suppression of Growth.**—The experimental results reported by Osborne and Mendel give no support to the widespread view that the capacity to grow, or growth impulse, is lost with age, independently of whether it has or has not functioned during the period usually associated with increase in size. It appears as if the capacity to grow is only lost by the exercise of this fundamental property of animal organism. Whether the span of life can be prolonged by delaying the completion of growth has not yet been ascertained under conditions that preclude disease or other anomalies of nutrition.

68. **Formation of Glucose from Citric Acid.**—The administration of sodium citrate to phlorizinized dogs and to a patient with diabetes mellitus was followed by an increased excretion of glucose indicating the conversion of the six carbon atoms of citric acid into glucose.

Journal of Nervous and Mental Diseases, Lancaster, Pa.

May, XLI, No. 5, pp. 273-344

71 Coordination of Movement. W. J. M. A. Maloney, New York.
72 Syphilitic Tests in Latent and Treated Syphilis. E. P. Corson-White and S. D. W. Ludlum, Philadelphia.

Lancet-Clinic, Cincinnati

May 30, CXI, No. 22, pp. 619-646

73 Present Status of Typhoid Vaccine in Prophylaxis and Treatment. T. Potter, Indianapolis.
74 Dermatitis Exfoliativa. Case-Report. J. W. Miller, Cincinnati.
75 Practical Differential Tests of Hearing. A. Randall, Philadelphia.

June 6, No. 23, pp. 647-686

76 Tetany. H. H. Hoppe, Cincinnati.
77 Radium Treatment of Cancer. J. and J. L. Ransohoff, Cincinnati.
78 Complications and End-Results of Bile-Duct Infection. J. E. Pirrung, Cincinnati.
79 Medical Teaching. J. W. Rowe, Cincinnati.

Medical Record, New York

June 13, LXXXV, No. 24, pp. 1059-1104

80 Word of Caution Concerning Palpation under Fluorescent Screen. J. T. Case, Battle Creek, Mich.
81 Trigger Finger: Its Cause and Mechanism. A. B. Judson, New York.
82 Pruritus Ani. J. M. Lynch, New York.
83 *Needle Protruding through Wall of Stomach. O. C. Smith, Hartford, Conn.
84 Subsequent Report of Patients Who Received Injections of Friedmann Vaccine over Year Ago. G. Manheimer, New York.
85 Should Sanitary Control of Prostitution Be Abandoned? J. Rosenstirn, San Francisco.
86 Clinical Estimation of Cholesterinemic [illegible]. C. K. Austin, Paris.
87 Management of Cardiorenal Disease. C. E. Nammack, New York.
88 *Vaccine Treatment of Chronic Rheumatism. H. Creeley, Brooklyn.

83. **Needle Protruding through Wall of Stomach.**—A woman, aged 37 years, of neurasthenic tendency, was operated on for calculous nephritis and the right kidney was removed. Following her operation she regained her weight, and from a condition of invalidism became quite well. Early in August three years later she experienced sharp, transitory pains at the epigastrium, both at meal time and in the intervals. She gradually became afraid to eat, lost weight, and early in September vomited small quantities of a bloody mucopurulent fluid. The patient had no recollection of having swallowed any foreign body or poisonous material, nor was she in the habit of holding pins or needles in her mouth.

A roentgenogram revealed a normal stomach in size and contour, but showed clearly a foreign body, pin or needle, protruding 1½ cm. through the anterior stomach wall at a point 3½ cm. proximal to the pylorus, on the lesser curvature. The stomach was exposed and the pointed end of the needle, dark but not corroded, was found protruding through the wall of the stomach in the peritoneal cavity.

The needle was drawn out of the wall of the stomach by forceps, breaking immediately after its removal, the portion of the needle lying within the cavity of the stomach being extensively corroded. The small opening in the stomach wall was closed with two purse-string sutures and the wall of the abdomen was closed without drainage. The stomach regained its normal function within a few days, and the patient regained her lost weight.

88. **Vaccine Treatment of Chronic Rheumatism.**—As it is apparent from the remarkably large masses of streptococci that can be scraped from the pharynx of most of these patients that such abnormal quantities must be consequent on diminished specific general resistance, and as in all cases vaccine prepared from them gives diagnostic focal reactions, under conditions aforementioned, Greeley states it is hardly worth while to attempt the difficult and sometimes impossible isolation from the blood or the joint. However, if one prefers, a similar and equally effective streptococcus may be isolated from the urine in all cases. Of the fifty-three vaccines which he has prepared for such treatment during the past year, five only were from the blood and some fifteen from the urine. As there appeared to be no difference in effectiveness between these and those made from the pharynx he took all others from the latter.

In the series cited by Greeley, varying in severity from occasional attacks of pain and stiffness in one or more joints to disabling swelling of both knees often lasting for weeks, universal improvement was effected by autogenous vaccines. This ranged from total cure, in the mild cases, to disappearance of all symptoms except transitory slight stiffness in the most severe, which improvement has now endured from six months to a year. Of course, Greeley says, such patients may experience other attacks, but if they should a repeated treatment would soon pick them up again, and as it is neither painful nor expensive it would not be feared. Entirely similar results are now being obtained in the other cases now under the same treatment. Greeley emphasizes that as a first principle of such treatment no case should be given a dose of vaccine during an exacerbation, marked by acute joint swelling, attacks of pain or temperature elevation. Furthermore, the vaccine must be autogenous —made from the patient's own organisms.

Michigan State Medical Society Journal, Grand Rapids

June, XIII, No. 6, pp. 355-416

89 Modern Treatment of Fractures. M. L. Harris, Chicago.
90 Crotalin Treatment of Epilepsy—Tabulated Report of Twenty-Two Cases. J. H. Douglass, Lapeer.
91 Carcinoma of Breast. H. J. Van den Berg, Grand Rapids.
92 Vaccines and Immunity in Their Relation to Surgery. O. A. Hart, St. Johns.
93 Ether Anesthesia. W. C. Huyser, Kalamazoo.
94 Intravenous Anesthesia. C. L. Candler, Detroit.
95 Non-Gravid Hydrorrhea Due to Hysteria. II. Abdominal Cesarean Section for Contracted Pelvis in Child of Twelve. III. For Threatened Eclampsia. R. Peterson, Ann Arbor.
96 Two Cases of Paraplegia Operation Followed by Improvement. C. D. Camp, Ann Arbor.
97 I. Chancre of Lip with Early Involvement of Nervous System. II. Dermatosis in Patient Exhibiting Neurologic and Psychiatric Findings. U. J. Wile, Ann Arbor.
98 Bilateral Specific Disease of Labyrinth with Left Facial Paralysis of Peripheral Type. II. Otitic Thrombosis of Sigmoid Sinus without Symptoms. R B. Canfield, Ann Arbor.
99 Four Unusual Cases of Strabismus. G. Slocum, Ann Arbor.
100 Demonstration of Electrocardiograph. F. N. Wilson, Ann Arbor.

New Jersey Medical Society Journal, Orange

June, XI, No. 6, pp. 271-324

101 Bone and Joint Surgery. G. H. Sexsmith, Bayonne.

New York Medical Journal

June 13, XCIX, No. 24, pp. 1165-1216

102 *Insolation. P. G. Woolley, Cincinnati.
103 *Treatment of Rheumatic Fever. H. C. Wood, Jr., Philadelphia.
104 Urethral and Prostatic Symptoms Caused by Large Internal Pile. V. C. Pedersen, New York.
105 Modern Trend in Treatment of Malignancy. R. H. Boggs, Pittsburgh.
106 Hypertrichosis in Women. J. H. Claiborne, New York.
107 Practice of Medicine Act. W. J. Cruikshank, New York.
108 Post-Mortem Examinations among Jews. C. D. Spivak, Denver.
109 *Teaching of General Medicine. C. H. Neilson, St. Louis.
110 Cesarean Section for Double Multilocular Ovarian Cyst. G. L. Brodhead, New York.
111 Magnetized Needle Holder. C. M. Stimson, Philadelphia.
112 Facilitating Crile Method of Transfusion. A. Kahn, New York.

102. **Insolation.**—Treatment of an attack of insolation, Woolley says, combines refrigeration with elimination, both active enough to produce good effects without embarrassing organs, such as the heart, which are already damaged. To accomplish the former the practice is to give ice cold packs or baths. To compass the latter recourse is commonly had to stimulants. This latter in Woolley's opinion seems not to be best, except as a last resort. Stimulation of an already burdened organ can do little good and much damage. Hydrotherapeutic methods he believes are of more value in insolation than drugs. Ice packs or iced baths have a great value, but should not be continued for more than a few minutes at a time and should be discontinued when the rectal temperature has reached 104 F. To replace the water lost to the body before the attack, and to increase elimination, there is no better method than infusion of saline solutions. If it is true that the oxygen content of the body is low and the acid content high, then such solutions should be alkaline. Woolley believes that such alkaline solutions as those recommended by Fischer are extremely efficacious whether given by rectum or intravenously, in neutralizing the acids of the body and increasing water elimination by the kidneys. The solution for rectal use he urges should be prepared as follows:

Sodium chlorid	30 gm.
Sodium carbonate (crystallized)	20 gm.
Water	1,000 c.c.

The injection should be given slowly enough to allow retention. The time consumed in injecting a liter should not be less than one hour.

For intravenous injection the following solution may be used:

Sodium chlorid	14 gm.
Sodium carbonate (crystallized)	10 gm.
Water	1,000 c.c.

This also should be given very slowly.

The effect of these solutions on the secretion of urine, Woolley states, is remarkable, and as a rule they will make it unnecessary to use digitalis. When this latter drug is used, it should be very carefully administered and its effects carefully watched. The use of strychnin is not advised in the active stage of the disease.

Such treatment will dispose of the immediate danger, and when this has been done treatment is symptomatic. In apyrexial heat exhaustion external hydrotherapeutic measures are uncalled for, and treatment should be eliminative and stimulative. The internal hydrotherapeutic methods should be very useful in these cases and should be combined with friction, massage, warm packs with sufficient internal stimulant medication. After recovery from an attack of insolation great caution must be observed by the patient to prevent recurrences from subsequent exposures to heat.

103. **Treatment of Rheumatic Fever.**—Wood believes that the local treatment should aim at encouraging rather than diminishing the joint congestion. By far the most important local measure is the immobilization of the inflamed joint, and protection. Measures which encourage the hyperemia, such as wrapping the limb in cotton batting, hot applications and mild counterirritation are of sufficient usefulness to justify their employment if they do not interfere with the efforts at restraint of motion. Fever is a defensive reaction. Unless it becomes excessive, as however it rarely does in this condition, it does not demand active interference. But the disturbed metabolism, the result of the high temperature, necessitates the employment of measures to maintain the nutritive condition of the patient. Foremost among these is rest in bed. This is important, not only, as in other fevers, to lessen tissue waste and conserve strength, but also because of the peculiar danger of cardiac complications of this infection.

As regards the diet, he gives milk with the addition of some form of starchy food, preferably a thoroughly cooked cereal, such as toasted bread, or rice which has been boiled six or eight hours. The monotony of the diet may safely be varied, not only by serving the milk in the form of junket or flavored with chocolate, but also by the use of eggs. Small amounts of coffee or tea, to those who are accustomed to their use, add greatly to the comfort of the patient and are not injurious.

There is no necessity, in Wood's opinion, of upsetting the stomach by the use of the alkaline carbonates. The acetates and citrates are oxidized in the body into carbonates, and therefore act as systemic antacids; but because of their neutrality they do not interfere with gastric digestion. On the other hand if we administer a sodium or potassium carbonate or bicarbonate, a portion of it will combine with the hydrochloric acid of the gastric contents. The resulting chlorid is not only incapable of neutralizing any systemic acidity, but is also much less actively diuretic than the citrates. For these reasons Wood greatly prefers either acetate or citrate. The potassium salts, he believes, are slightly more active as diuretics than the corresponding salts of sodium, and increase the completeness of the oxidative processes in the body, thereby lessening the amount of uric acid to be excreted. The most pleasant way of administering potassium citrate is by acidulating with lemon juice or citric acid. From twenty to thirty grains of the salt should be given every two or three hours, or until the urine becomes alkaline in reaction.

109. Abstracted in The Journal, March 14, p. 880.

Old Dominion Journal of Medicine and Surgery, Richmond

May, XVIII, No. 5, pp. 237-277

113 Spartein Sulphate: Its Cardiovascular and Renal Actions. L. B. Wiggs, Richmond.
114 Case of Apoplexy Observed from Onset. B. M. Randolph, Washington, D. C.
115 Case of Cerebral Thrombus Following Injury. B. R. Tucker, Richmond.
116 Relation of Paroxysmal Hemoglobinuria and Raynaud's Disease. Report of Two Cases. R. S. Preston, Richmond.

Vermont Medical Monthly, Burlington

May 15, XX, No. 5, pp. 105-130

117 Arteriosclerosis. J. Gibson, St. Albans.
118 An Appeal to Cancer Research Institutions. A. F. A. King, Washington, D. C.
119 Case of Hystero-Epilepsy with Recovery and Comments on Psychanalysis. W. D. Berry, Burlington.

Washington Medical Annals

May, XIII, No. 3, pp. 173-231

120 Fundus Oculi. W. T. Davis, Washington.
121 Case of Polyposis Gastrica (Polyadenoma). D. S. Lamb, Washington.
122 Case of Breech Presentation at Eight and One-Half Months Complicated by Fibroids; Confirmed by Roentgenograms. P. Willson and J. H. Selby, Washington.
123 Tonsillectomy: Its Indications and Choice of Operation. W. H. Huntington, Washington.
124 Surgical Mortality from Standpoint of Anesthetist. H. W. Kearney, Washington.
125 Arteriovenous Anastomosis for Threatened Gangrene; Case-Report. H. H. Kerr, Washington.

West Virginia Medical Journal, Wheeling

June, VIII, No. 12, pp. 395-432

126 Cases of Nasal Reflex. G. A. Aschman, Wheeling.
127 Surgical Treatment of Nephritis. J. E. Cannaday, Charleston.
128 Pituitrin Displacing Forceps. G. R. Davis, MacDonald.
129 Alcoholism. R. M. McMillen, Wheeling.
130 Cancer of Breast. W. H. Young, Sistersville.

Wisconsin Medical Journal, Milwaukee

June, XIII, No. 1, pp. 1-34

131 *Serodiagnosis of Pregnancy. C. M. Echols, Milwaukee.
132 Indications for Vaccine and Serum Therapy. J. K. Chorlog, Madison.
133 Legal Responsibilities of Surgeon in Cases of Fracture. H. Reineking, Milwaukee.
134 Tumors of Carotid Body. A. H. Levings, Milwaukee.
135 Cancer and Cancer Problem. W. E. Ground, Superior.

131. Abstracted in The Journal, Nov. 1, 1913, p. 1657.

FOREIGN

Titles marked with an asterisk (*) are abstracted below. Single case reports and trials of new drugs are usually omitted.

British Medical Journal, London

May 30, I, No. 2787, pp. 1165-1220

1 *Infantile Paralysis (Acute Anterior Poliomyelitis). Its Early Treatment and Surgical Means for Alleviation of Deformities. R. Jones.
2 *Type of Tubercle Bacilli Occurring in Sputum of Phthisic Persons. A. S. Griffith.
3 *Alterations in Blood Occurring in Hay-Fever. E. Emrys-Roberts.
4 Variations in Leukocytes in Certain Diseases. D. Thomson.
5 Suspension Laryngoscopy and Its Practical Use. G. Killian.

1. **Early Treatment of Infantile Paralysis.**—Jones lays down the lines on which medical treatment should be given to cases of poliomyelitis in their earliest stages, and emphasizes the fundamental importance of beginning that treatment at the earliest moment possible. Treatment at this stage habitually falls into the hands of the medical man in attendance and not into those of the surgeon; and Jones would make it a general rule that in every case the head and spinal column should be kept at rest from the very beginning of the attack. If the child has much pain in the spine and limbs, as not rarely happens, fixation of the spine and limbs gives more relief than any other procedure. In any case, to keep the spinal cord and head at rest, so far as possible, in acute poliomyelitis, is only to act in accordance with the general principles regulating the treatment of inflamed organs or areas in other parts of the body. It is important that this rest, continued through the acute and early convalescent stages, should be continued so as to prevent the adoption of faulty positions by the affected limbs in order that the deformities that are likely to follow the paralysis may be minimized. Until the tender stage of the disease has passed away—a matter of from three to eight weeks or even more, Jones says, no active treatment should be undertaken; it is argued that active myelitis may be present throughout the tender stage, so that treatment by massage or electricity would be premature.

Having drawn attention to the importance of complete rest during the early stages of infantile paralysis, Jones points out the necessity for great care when active treatment is begun. It is not the nervous part only of the neuromuscular apparatus that is damaged in infantile paralysis; the motor nerve cells in the anterior horns of the spinal cord are injured in this disease; but Jones believes it is not so generally realized that the affected muscles may suffer doubly—first, in their nerve-supply; and, secondly, by being themselves overstretched while thus disabled. Hence it is of great importance that from the first they should not be stretched, and to avoid this attention must be given to the position of the limb; and, again, that when massage and active movements are prescribed care should be taken to avoid the possibility of straining or overstretching the injured muscles. The massage must be very gentle at first, the movements must be carefully limited, and the limb must be put up in apparatus so as to keep the paretic muscles in a position of relaxation until they have improved in tone. The success of treatment depends on the maintenance of this muscular relaxation continuously until there is evidence that the damaged muscles have begun to recover. When this occurs, the position of relaxation may be gradually discontinued.

Jones gives a very clear and careful account of the various methods of treatment he has found effective in infantile paralysis, and he emphasizes and explains his points with a number of illustrative cases.

2. **Type of Bacilli in Sputum of Phthisic Persons.**—The object of Griffith's inquiry has been not only to discover cases of pulmonary tuberculosis which were expectorating bovine tubercle bacilli with the sputum, but also, and especially, to study the clinical course of such cases, and, if they ended fatally and a necropsy was obtained, to make careful investigation of the distribution, character and bacteriology of the tuberculous lesions.

The number of strains of tubercle bacilli obtained in culture from the sputum of 148 persons suffering from pulmonary tuberculosis was 186. From 115 of the sputum samples (115 individual patients) the cultures were isolated direct by means of antiformin. From 63 sputum specimens (63 patients), of which 30 had yielded cultures direct, cultures were obtained through the guinea-pig. The cultures derived from 147 of the patients were eugonic, while those (9 strains) obtained from several samples of sputum from the remaining patient were dysgonic. The 177 strains isolated from the sputa of the 147 patients produced on all the test media employed the luxuriant growths which are characteristic of the human type of tubercle bacillus.

The virulence of the tubercle bacilli present in 80 of these sputa has been tested on the rabbit. Of 27 rabbits inoculated subcutaneously with sputum from 27 patients, 2 died in 55 and 58 days, and showed a local caseous abscess, and slight tuberculosis of the lungs. The rest of the rabbits were killed after periods varying from 84 to 104 days. In 2 of these 25 rabbits a local lesion only was found, in one there was a local lesion and slight tuberculosis of the nearest glands. All the rest showed a local caseous abscess and tuberculosis of the lungs, the disease in the latter organs being slight in 22 rabbits and moderately severe in 2 rabbits; the nearest glands were affected in 6, and the kidneys in 5 of these 21 rabbits.

Of 43 rabbits inoculated subcutaneously with 10 to 50 mg. of culture from 43 patients, 3 died in 41 to 53 days, and showed a local caseous abscess and slight tuberculosis of the lungs, the nearest glands of one of the rabbits also being tuberculous. The remaining 40 rabbits were killed (a few died, but not of tuberculosis) in periods varying from 86 to 160 days. One of these showed a local lesion only. All the rest showed besides a local caseous abscess, some amount of dissemination; the lungs were tuberculous in each of the 39 rabbits, slightly in 33 and moderately severe in 6; the kidneys were slightly tuberculous in 11 rabbits; the nearest glands were tuberculous in 25, normal in 14 rabbits; in 1 rabbit there was tuberculosis of the mamma.

Rabbits to the number of 15 were inoculated intravenously with culture from 12 patients, the dose for each rabbit being 0.01 mg. The pathogenic effects produced by these cultures exhibited the range of variation which is usual after the intravenous inoculation of human tubercle bacilli. There was no indication from the pathogenic effects produced in any of the 85 rabbits, whether inoculated with sputum or with culture, of the presence in any of the sputa of tubercle bacilli of higher virulence than typical human tubercle bacilli.

3. **Alterations in Blood in Hay-Fever.**—Emrys-Roberts, himself a victim of hay-fever, made daily examinations of his blood for about eight weeks throughout the attack. The hemoglobin content varied from 65 to 80 per cent., the color index from 0.4 to 0.8 and the red blood-count showed an almost consistent polycythemia, while the leukocyte count showed an equally marked leukopenia. The polycythemia is unassociated with either an enlarged spleen or cyanosis.

The differential leukocyte count showed a diminution of polymorphs, a marked increase of large mononuclears and transitionals, a definite increase of eosinophils and the presence of occasional mast cells. The variation in rouleaux formation was not great. No correlation to the symptoms could be adduced in the case of the blood-platelets, the presence of phantom cells was noted throughout, and particularly noticeable were the large numbers, sometimes amounting to 5 per cent. of the total count, of "dead" leukocytes—that is, leukocytes whose nuclei had undergone complete degeneration and whose protoplasm had become unrecognizable. By the study of forms intermediate between healthy leukocytes and "dead" leukocytes it was possible to determine that by far the largest proportion were derived from large mononuclears and transitionals. In addition it was also noted that, throughout the attack, many of the leukocytes, more especially the large mononuclears and transitionals, exhibited well-marked vacuoles both in protoplasm and nucleus.

It was also noticed that the red blood-corpuscles showed decided variations in relative size, macrocytes and microcytes being always commonly found while distortions in shape were by no means uncommon, almost amounting to a definite poikilocytosis. The fusion of several red blood-corpuscles into the form of a rosette was noted from time to time. Polychromatosis was noted twice. No nucleated reds were seen at any time. The size and staining properties of the blood-platelets varied considerably, sometimes they were uniformly small, at other times there would be many large forms scattered about, while sometimes they would be stained deeply, at other times quite lightly. The blood during the interval between the attacks has become distinctly healthier, though it did not conform with the recognized standard of a normal blood

Indian Medical Gazette, Calcutta

May, XLIX, No. 5, pp. 169-212

6 Itinerating Dispensaries. H. E. Drake-Brockman.
7 Chronic Intestinal Stasis. F. Barnardo.
8 Relationship between Laboratory and Clinical Work. A. Whitmore.
9 Sclerocorneal Trephining for Staphyloma of Cornea—Seventeen Cases. C. H. Reinhold.
10 Abdominal Surprises. A. Neve.
11 New Operation for Cure of Vesicovaginal Fistula. F. C. Fraser.
12 Ascaris Infection. R. F. MacGregor.
13 Case of Bilharzia Disease. A. Hooton.

Journal of Obstetrics and Gynecology of British Empire, London

April, XXV, No. 4, pp. 175-230

14 Case of Superior Rectovaginal Fistula Dealt with by Abdominal Route after Preliminary Colostomy. T. W. Eden.
15 Treatment of Pregnancy Complicated by Morbus Cordis by Means of Cesarean Section under Spinal Anesthesia. J. Barris.
16 Advanced Extra-Uterine Pregnancy with Tuberculous Peritonitis. J. H. Croom.
17 Uterus Bicornis Bicollis; Six Months' Pregnancy Right Horn, Pyometra Left Horn. G. B. Marshall.
18 Acute Hydramnios Occurring with Uniovular Twins about Eighteenth Week of Pregnancy. G. B. Marshall.

Journal of Tropical Medicine and Hygiene, London

May 15, XVII, No. 10, pp. 145-160

19 Vaccine Lichen in Natives. A. J. Chalmers and W. Byam.
20 List of Blood-Sucking Arthropods from Lower Congo, with Vocabulary. M. Gamble.

Lancet, London

May 30, I, No. 4735, pp. 1515-1588

21 Surgical Treatment of Infantile Paralysis. R. Jones.
22 *Case of Intrinsic Cancer of Larynx. S. Thomson.
23 *Method by Which Remedial Agents May Be Mingled with Cerebral Cerebrospinal Fluid. C. A. Ballance.
24 Treatment of Parenchymatous Syphilis by Intracranial Medication. H. Campbell.
25 *Intrathecal Injection of Salvarsanized Serum. G. W. Spencer.
26 Occurrence of Ascites of Non-Tuberculous Origin in Chronic Recurrent Diarrhea in Childhood. F. J. Poynton and H. Paterson.
27 *Operation for Undescended Testicle. R. Thompson.

22. **Intrinsic Cancer of Larynx.**—Cancer of the vocal cords according to Thomson is, in early stages, a very slowly progressive and strictly limited process. In his case hoarseness dated from eight months, the cord was still mobile, and the disease was still superficial. Alteration of voice is the principal and may be the only symptom. Persistent hoarseness in any patient calls for a definite diagnosis. Diagnosis is based chiefly on inspection of the larynx. Only in certain cases, in which the growth is a superficial and not an infiltrating one, can it be confirmed by microscopic examination. The growth, even when it occupies almost the entire length of a vocal cord, can sometimes be completely removed by endolaryngeal operation in early cases. But this completeness can only be ascertained when, by laryngofissure, the remains of the vocal cord and adjoining soft parts have been removed and submitted to the pathologist.

Laryngofissure is, therefore, the operation of choice in all cases of endolaryngeal cancer. The operation offers the best prospects: (1) because the disease remains for some time superficial and limited, and (2) because laryngofissure cannot be considered a dangerous operation. Statistic results show a lasting cure in 80 per cent. of cases, and if all cases presented themselves and were diagnosed early there is no reason why the results should not be even more satisfactory.

Thomson's patient is in good health, with a useful voice, and has no recurrence at the present date—that is, one and a half years after operation.

23. **Remedial Agents and Cerebrospinal Fluid.**—In a case cited by Ballance in which this method was employed the patient was anesthetized and the head arranged in a position as nearly vertical as possible. A trephine opening was made to the right of the middle line just in front of the bregma. The dura was then opened and the inner surface of the right cerebral hemisphere was gently drawn outward by means of a retractor (1 cm. wide) bent at a right angle. It had previously been ascertained that the anterior cornu of the lateral ventricle was distant 6½ to 7 cm. (roughly 2½ to 2¾ inches) from the surface of the scalp at the mid-line on the vertex. A cannula (having a lumen of 1 mm. and a length of 3 inches) was then passed through the anterior part of the corpus callosum about a quarter of an inch to the right of the middle line. It was felt to enter a cavity, namely, the anterior cornu of the lateral ventricle.

The cannula was fitted with a stylet whose rounded end projected beyond the end of the cannula. The passage of the stylet and cannula through the corpus callosum could not divide any vessel and might be thought of as pushing aside rather than cutting any of the commissural fibers of the corpus. On the entrance of the cannula into the lateral ventricle the stylet was withdrawn and cerebrospinal fluid escaped, not continuously, for there was a distinct ebb and flow due to the arterial pulsations or to the respiratory movements. A rubber tube attached to a graduated glass vessel was then fixed to the cannula and the infusion into the ventricle commenced, at first with normal saline solution and then with salvarsanized serum; of the serum varying quantities have been used from 35 c.c. to 60 c.c. As the infusion proceeded it was noticed that the brain bulged into the trephine opening, but on closer inspection it was clear that the bulge was not a brain hernia, but that the cortical subarachnoid space was filling up with fluid. The 90 c.c. of fluid (salt solution and serum) took about twenty minutes to infuse and the pressure varied from 6 inches to 18 inches. No ill effects have occurred from the injection of the serum into the ventricle. In the first case the fluid flowing very slowly the glass vessel was raised when a little respiratory difficulty occurred which was probably due to pressure in the fourth ventricle, the fluid not escaping quickly enough through the foramen of Majendie. It only remained at the conclusion of the infusion to withdraw the cannula from the lateral ventricle and to stitch up the scalp, which in each case has healed by first intention. No ill effects have followed the infusion.

Ballance has introduced salvarsanized serum on five occasions into the lateral ventricle; twice in two patients and once in a third patient. Ballance suggests that the method be useful for introducing remedial agents into the cerebral cerebrospinal fluid in other diseases of the brain besides that caused by syphilis. Sleeping sickness, meningitis, tetanus and epilepsy are such diseases. The passage of the cannula through the corpus callosum appears to be innocuous, and the operation as a whole with reasonable care is free of all danger.

25. **Intrathecal Injection of Salvarsanized Serum.**—Spencer believes that the intrathecal injection of salvarsanized serum offers a hopeful method of treating and arresting the progress of tabes and other parenchymatous diseases of the spinal cord. A cure of the lightning pains can almost definitely be promised. The injections, if carried out with special aseptic care and technic, do not endanger the patient's life.

27. **Operation for Undescended Testicle.**—The usual incision is made by Thompson for the exposure of the external opening of the inguinal canal, with two exceptions —it is longer and it is curved. The incision commences just internal to the anterior superior spine, and proceeds in a sinuous manner into the scrotum. The first part lies half an inch above, and parallel with, the outer half of Poupart's ligament. The second part is curved with its convexity directed downward and outward. It begins just above the middle of Poupart's ligament and terminates near the pubic spine. The third part curves downward into the scrotum, and is of equal length to each of the two other parts of the incision. Its convexity is directed upward and inward. The external ring is exposed and any hernia treated in the usual way. The vas is isolated with its accompanying artery and vein. The cremasteric plexus of blood-vessels and lymphatics is removed between ligatures.

A finger is introduced into the cavity of the scrotum and the testicle is brought down and placed in the scrotum, in which it is retained by an assistant. The extremities of the middle part of the incision are then united by a curved incision whose convexity is directed upward and inward, and an oval flap of skin and subcutaneous tissues, extending down to the external oblique muscle, is dissected and isolated. This oval flap is then transferred to the scrotal part of the incision and sutured to both sides of this part, so that its lower apex lies in the lowest part of the scrotal portion of the incision. The rest of the wound is then sewed up in the usual way. By this means the scrotum is appreciably enlarged and, as it were, stiffened by a portion of tissue which contains no "dartos" muscle, and therefore remains uncontracted.

Annales de Gynécologie et d'Obstétrique, Paris

May, XLI, No. 11, pp. 257-320

28 *Trismus Uteri Decapitating Fetus. (Rétraction de l'utérus sur la tête foetale séparée par décollation.) Potocki and Sauvage.
29 Retro-Uterine Hematocele from Rupture of Ovarian Cyst. P. Lecène and R. Taitz.

28. **Trismus Uteri.**—Potocki and Sauvage report the decapitation of the fetus from spasmodic contraction of the uterus in a case of shoulder presentation at the middle of the seventh month. The mother was 17. The retraction was such that neither with the hand nor with instruments was it possible to evacuate the uterus during twenty-four hours of efforts. After the embryotomy, signs of infection became evident, compelling immediate action. Parotitis developed the day after the hysterectomy, probably a simple infection from the mouth favored by the repeated application of general anesthesia in the course of a few hours. The girl left the hospital in good condition a month later.

Bulletin de l'Académie de Médecine, Paris

May 19, LXXVIII, No. 20, pp. 665-669

30 Experimental Tuberculous Reinfection of the Lung. (Le concept bactériologique du terrain tuberculeux.) F. Bezançon.
31 Operations on Diabetics. M. Labbé. See Paris Letter, June 13, 1914, p. 1906.

Journal de Chirurgie, Paris

May, XII, No. 5, pp. 561-688

32 Treatment of Ankylosis by Murphy's Method Applied to the Knee. M. Guillot and G. Dehelly.
33 Compression of the Rectum by Fibrous Masses Relics of Old Uterine or Tubal Processes; Two Cases. (Les fibroses périmétro-rectales.) J. and P. Fiolle.

Journal de Médecine de Bordeaux

LXXXV, Nos. 21-22, pp. 357-386

34 Value of Association of Physiotherapy with Psychotherapy in Treatment of Psychoneuroses. A. Fraikin.
35 Simple Technic for Estimating Sugar and Lactic-Acid Content of the Blood. (Considérations générales sur la dégradation des hydrates de carbone dans l'organisme.) L. Chelle and P. Mauriac.

Journal d'Urologie, Paris

May 15, V, No. 5, pp. 545-680

36 Pneumaturia; One Case. M. Cealic and V. C
37 *Suture of Ruptured Urethra. (Résultats
raphies circulaires suivies de dérivation.)

38 Vaccine Therapy of Acute Gonorrhea. (Traitement de la blennorragie aigue par le vaccin atoxique.) Jungano.
39 *Regional and Local Anesthesia in Urology. G. Lemoine
40 Papillomas Hiding Ureter Mouth. (Extirpation dans la vessie des papillomes volumineux à implantation péri-urétérale.) S. Rolando.
41 Tuberculosis of the Kidney. (Tuberculose rénale et constante d'Ambard.) G. Marion. (Tuberculose rénale à forme anormale.) M. Pillet.
42 Expulsion of Ureter Calculus after Injection of Glycerin. M. Perrier.
43 *Cystic Disease of the Kidneys. M. Mickaniewski.
44 Examination of the Urine. (La méthode des trois verres en urologie.) Grimani.

37. **End-to-End Suture of Urethra.**—Marion described in the April number of the *Journal*, 1912, the method of circular urethrorrhaphy over a large catheter, with temporary diversion of the urine, which he had then applied in four cases for rupture or stricture, traumatic or uncontrollable from any cause, or chronic fistulas in the perineum. He briefly summarizes the technic here and reports six further cases, all recently reexamined from six months to three years after the operation. The urethra was found permeable in all, the diversion of the urine having permitted the urethra to heal rapidly and smoothly.

39. **Local Anesthesia in Urology.**—Lemoine states that in his service at Brussels general anesthesia has long been entirely abandoned for urogenital work. This has much widened the field of operability, as the local anesthesia or blocking the nerve involved is comparatively harmless. His experience has been that the Sellheim-Kappis technic for blocking the dorsal and lumbar spinal nerves is easy, harmless and certain. The Danis technic is better for the sacral nerves. This induces analgesia of the pelvis in the simplest and most harmless manner. The epidural technic (Cathelin-Läwen) was not found practicable or reliable. Nine illustrations accompany the description of the technics and the areas which each renders insensible.

43. **Cystic Disease of the Kidney.**—The literature on this subject is reviewed, the conclusion being that the disease is almost inevitably bilateral and treatment can be only palliative as a rule unless intolerable pain, suppuration of the cysts, persisting hematuria or anuria compel intervention. Decapsulation of the kidney and cutting out all of the cysts or partial nephrectomy has given by far the best results to date. In case of suppuration, nephrotomy alone is justified if it cannot be avoided, but it should never be done in case of anuria. Puncture, incision and suturing the lips of the cyst to the skin have long been abandoned, except possibly when there is suppuration. The above conclusions are based on 194 cases compiled by Mickaniewski. Nephrectomy deprives the patient of some still functionally capable kidney tissue, and 30 per cent. of the 127 nephrectomized patients died. Conservative operations have a record of 49 per cent. mortality in 27 nephrotomies; 30 per cent. in 15 cases of punctures or incision. On the other hand, partial nephrectomy gave excellent results in the 3 cases in which it was applied, and even better results were obtained in all the cases by decapsulation plus excision of the cysts.

Lyon Chirurgical

May, XI, No. 5, pp. 425-548

45 Diverticula of the Small Intestine Other than Meckel's Diverticulum. A. Latarjet and J. Murard.
46 Regeneration of Nerve Tissue in the Test-Tube. (Régénération des cylindraxes in vitro.) R. Ingebrigtsen.
47 *Stoffel's Operation for Spastic Paralysis. J. Anzilotti.
48 Obliteration of Space Below the Liver with Gall-Stone Operations. (L'exclusion de la loge sous-hépatique en chirurgie biliaire.) X. Delore and L. Arnaud.

47. **Operative Treatment of Spastic Paralysis.**—Stoffel's method was discussed in The Journal, Feb. 8, 1913, p. 485, abstract 154.

Lyon Médical, Lyons

XLVI, Nos. 18-19, pp. 969-1068

49 Frequent Coincidence of Gall-Stones and Diabetes. Dufourt.
50 *Miliary Tuberculosis of the Meninges and Peritoneum Secondary to Tuberculous Metritis. M. Brette.
51 Heliotherapy of the Larynx. Collet.

50. **Miliary Tuberculosis from Caseous Metritis.**—Brette gives the history of the case described in the title and of another fatal case of tuberculous peritonitis in which an area of cheesy degeneration was found in the uterus. He concludes that in all cases of metritis the nature of which cannot be determined by clinical examination, tissue should be removed for inoculation and microscopic examination. In these cases the microscope showed the lesions characteristic of tuberculosis.

Presse Médicale, Paris

XXII, Nos. 42-43, pp. 401-420

52 *Psychoneuroses with Low Blood-Pressure. (Les psycho-névroses hyposphyxiques.) G. Maupetit.
53 *The Nervous System in Occupational Skin Diseases. (Rôle du système nerveux dans les dermites professionnelles.) P. Jourdanet.
54 *Prognosis in Chronic Nephritis from Urea Content of Blood. (Recherches sur la Constante uréo-sécrétoire d'Ambard.) F. Widal, A. Weill and P. V. Radot.
55 Etiology of Typhoid. H. Plotz (New York).

52. **Neurasthenia and Other Psychoneuroses with Abnormally Low Blood-Pressure.**—Maupetit refers to the syndrome described by Martinet in 1913 as *le syndrome hyposphyxique et insuffisance pluriglandulaire.* The trouble is essentially a weakness of the circulation and variability in the blood-pressure in different arteries while at the same time there is hypertension in the veins. The result is a vicious circle unless it can be broken up by raising the tone of the cardiovascular system, giving the appropriate organ extract, stimulating the muscle system and increasing blood production and nutrition in general by subcutaneous injections of oxygen, subcutaneous injections of physiologic salt solution and regulation of the diet to avoid eggs and restrict the amount of fluid at the noon meal to a single half glass. The patients otherwise eat at will at breakfast and at noon, but they skip the evening meal or at most take a single dish of some vegetable or cooked fruit, no bread. An hour and a half or two hours later a cup of tea is allowed. This mode of dieting is not depressing while it puts an end to the gastro-intestinal intoxication responsible for lack of sleep or restless sleep, nightmares, fetid breath and flatulence. The cure is hastened by taking a teaspoonful of sodium sulphate in a half glass of water on rising. A further measure he insists on is that the patient must *not* sleep more than eight hours during the twenty-four. Muscular exercises are indispensable and the patients recuperate so rapidly on the above that they soon cease to shrink from exercising. He relates in conclusion a typical case of neurasthenia of the melancholia type with neuralgia, membranous colitis, etc., in a woman of 32 who had been treated for years in the most varied ways—all to no avail, but she was promptly cured by the above course of treatment.

53. **Rôle of the Nervous System in Skin Affections.**—Jourdanet takes as an example occupational eczema or other skin affections, showing how they are liable to break out suddenly on the occasion of some fright or other emotional stress. He cites a number of examples of housewives doing a big washing, in varnishers and others. The conflict or the convergence of the external irritation with one or more internal irritations proves the last straw and the cellular reaction follows. This convergence of irritations, he emphasizes, is a law of general biology that reigns throughout all pathology.

54. **Prognosis of Chronic Nephritis Based on Urea Content of the Blood.**—Widal here presents the valuable record of numerous patients with chronic nephritis to whom the various tests for estimation of the functional capacity of the kidneys have been repeatedly applied in the course of several years. They demonstrate that the mere estimation of the urea content of the blood serum from time to time is a reliable and accurate means of keeping an oversight of the azotemia in chronic kidney disease. The technic is extremely simple. As long as there is no more than 0.5 gm. of urea to the liter, there can be no question of azotemia. When the proportion surpasses this or reaches 1 gm., the

tests should be frequently repeated. When the proportion runs up to 2 gm. he regards the patient as in more danger than many persons with cancer.

Revue Médicale de la Suisse Romande, Geneva

May 20, XXXIV, No. 5, pp. 301-384

56 *Rigidity of the Abdomen. (La défense musculaire et le ventre de bois.) Roux.
57 *Influence of Salvarsan on Syphilitic Meninges. (La séreuse sous-arachnoidienne en regard de la syphilis. Influence du traitement salvarsanique.) Dind.
58 Present Status of Treatment of Paresis. (Les acquisitions récentes dans le domaine de la paralysie générale.) Bonhomme.
59 Induced Pneumothorax. Meyer.

56. **Rigidity of the Abdominal Wall.**—Roux emphasizes the necessity for discriminating between the sudden, circumscribed and transient contraction of the muscles, forming the "muscular defense," and the true and persisting contracture forming the "wooden" abdomen; with the latter the patient seems to be trying to hold his abdomen rigid even against his will, and nothing can simulate or arrest it. The "wooden" abdomen is the extreme degree of the "muscular defense." It imparts no decisive information as to what is going on below, and after an accident to the abdomen it is of no practical importance, as a rule. But when the abdominal wall grows suddenly hard as a board, without an accident to explain this, it suggests intense irritation below, generally of chemical origin, from perforation of the stomach or upper bowel. It was not evident in a number of his cases of spontaneous hemorrhage in pancreas or adrenals and he noticed it only once, and then very slight, with extra-uterine pregnancy, torsion of genital organs, appendicitis and spontaneous rupture of the rectum. As it is the exception which tests the rule, he concludes by reporting a case in which intense pain throughout the abdomen and kidneys and the persisting rigidity of the abdominal walls compelled a laparotomy. Nothing pathologic was found in the accessible organs but the symptoms subsided. Another attenuated attack seventeen days later terminated in the expulsion of three small kidney stones, since which time there has been no further disturbance.

57. **Influence of Salvarsan on Syphilis of Central Nervous System.**—Dind has been examining repeatedly the cerebrospinal fluid in a number of syphilitics in the secondary stage, especially just before, during and following skin manifestations; also in a number two or more years after infection, and in sixteen with paresis, tabes or other affection of the central nervous system. The findings on lumbar puncture in 190 cases demonstrate that the pressure is abnormally high as a rule when there is involvement of the nervous system, and occasionally without such. There is also pronounced lymphocytosis as a rule during the stage of septicemia—evidenced by the exanthem—and also when the nervous system is impaired as shown by ataxia, paresis, intense headache or ictus. In four cases in this last group the findings on repeated lumbar puncture showed remarkable changes for the better under the influence of a course of neosalvarsan. These objective findings, he says, are more convincing testimony than the euphoria presented by the patients, as this is common with almost any new remedy.

Archiv für Gynäkologie, Berlin

CII, No. 3, pp. 411-659. Last indexed April 18, p. 1289

60 *Permanent Cures after Operations for Recurrence of Uterine Cancer. E. Zweifel.
61 Action on Smooth Muscles of Hypophysis Extract from Gravid and Non-Gravid Animals. (Vergleichendes Studium über die Wirkung des Hypophysenextraktes von trächtigen und nicht trächtigen Tieren auf die glatte Muskelfaser.) E. Santi.
62 *Morphology and Functioning of the Ovary in Health and Disease. B. Aschner.
63 Vaginal Myomas. R. Müller.
64 Lack of Inhibitor Reflex Cause of Surprisingly Rapid Delivery with Spinal-Cord Disease. (Ursache des überraschend schnellen Geburtsablaufes bei Rückenmarkserkrankungen.) R. Zimmermann.
65 *Proteolytic Serodiagnosis of Pregnancy. (Bedeutung der Antitrypsinmethode für die serologische Schwangerschaftsdiagnostik.) R. Franz.
66 Uterine Sarcoma Secondary to Infectious Granuloma. T. Nagy.
67 History of Obstetrics in Ancient Rome. (Beiträge zur ältesten Geschichte der Geburtshilfe in Rom.) S. E. Wichmann.

60. **Ultimate Outcome after Operations for Recurrence of Cancer.**—Zweifel reports from the Jena clinic what he thinks is the longest survival on record after an operation for recurrent uterine cancer. Vaginal hysterectomy was done in 1902 and the following year an extensive recurrence was removed by an abdominal operation. The patient is still in robust health, working in the field. The clinic has a record for 1903 to 1909 of twenty-three operations for recurrence, and the outcome to date is known in twenty cases. Five women were operated on twice for recurrence, one three times and another five times. In only 6 was the primary operation vaginal. In 3 cases the supposed recurrence proved to be of another nature. Five of the remaining 17 are free from recurrence to date. One woman developed recurrence seven years after the first operation. The interval in the permanently cured cases is over ten years in two, and over four, five and six in the others, the average being seven and a half years. The woman of 66 operated on five times for recurrence is now 75 and has had no sign of trouble during the last four and a half years. In another case a woman of 44 had to have one kidney and part of the bladder removed in 1903 on account of involvement of the ureter in the recurring cancer. She is in good health to date. The clinic now insists that women should return for regular examination every three months during the first three years. Only about 10 per cent. of the recurrences developed later than this.

62. **Functions of the Ovary.**—Aschner devotes sixty-four pages to this study of the morphology and functioning of the ovaries in normal and pathologic conditions, in various animals and man. He notes that defective development of the ovaries does not modify the sexual characters so strikingly as defective development of the testicles. The relations between the ovaries and the nervous system are twofold: the functioning of the ovaries is regulated by the nervous system and the ovaries regulate both the vegetative and the central nervous system. There is much to sustain the view that some disturbance in the internal secretion of the ovary is responsible for hysteria. By testing for protective ferments according to Abderhalden it may prove possible to control hysteria by organotherapy, reducing or supplementing the functioning of the ovaries by partial castration or giving ovarian extract. Radiotherapy and organotherapy, he thinks, have a future in this field, especially when combined with measures for enteroptosis, etc. Many cases of neurosis can undoubtedly be benefited along these lines, although it is beyond our power to cure constitutional inferiority.

65. **Antitryptic Serodiagnosis of Pregnancy.**—Franz made 223 tests of the proteolytic power of the serum from 47 women at different stages of pregnancy or the puerperium. The serum of 68 women in labor and of 95 in the puerperium was also tested, and of 4 with toxic pregnancy, skin affections or eclampsia. The results are tabulated in detail and compared with the findings in a number of non-pregnant women. All the evidence confirms the fact that the antiproteolytic property of the serum is very much higher toward the end of a pregnancy than in non-pregnant women. All the affections causing increased absorption of albumin in the body augment the titer still farther. The reaction is not specific at all but it may aid in the diagnosis of pregnancy, especially if the titer of the serum before conception had occurred is known.

A negative reaction, he declares, may be regarded as always excluding the possibility of pregnancy. With a positive reaction, nephritis, cancer, tuberculosis, etc., must be excluded before the reaction can be accepted as a sign of pregnancy. He suggests that sufficient attention may not have been paid to this point in applying the Abderhalden test. The proteolytic test permits, he adds, the positive exclusion of pregnancy in thirty minutes after drawing the 3 or 5 cm. of blood from the patient for the purpose, while the simplicity and ease of the technic commend it still further. The test depends on the digestion of a sodium-casein solution to the point at which it no longer gives a precipitate with dilute acetic acid. Franz has slightly modified the original Fuld-Gross technic for the purpose, as he describes in detail. (The original technic is given in the new edition of New and Nonofficial Remedies (in press), under the heading "Digestive Ferments: Determination of Tryptic Value.")

Correspondenz-Blatt für Schweizer Aerzte, Basel

XLIV, Nos. 20-22, pp. 609-704

68 Typhoid Epidemic in Zurich District, 1913. R. Frey.
69 *Etiology of Goiter. (Zum Kropfproblem.) T. Dieterle, L. Hirschfeld and R. Klinger.
70 Necropsy Findings in Paratyphoid. (Sektionsbefund bei Infektionen mit Bakterium enteritidis Gärtner.) J. L. Burckhardt.

69. **The Goiter Problem.**—Dieterle and his coworkers assert that Bircher's conclusions as to the incidence of goiter in Switzerland are untenable as they are based on alleged facts which later research has shown to be incorrect. Bircher's statements therefore in regard to the drinking water as a factor in goiters must be disregarded. (His views were briefly summarized in The Journal, March 26, 1910, p. 1094, and discussed editorially Feb. 14, 1914, p. 538.)

Deutsche medizinische Wochenschrift, Berlin

May 28, XL, No. 22, pp. 1097-1128

71 *Treatment of Pulmonary Edema. Grober.
72 *Recurrences of Syphilis in Nervous System under Salvarsan. (Ueber Abortivheilungen und Neurorezidive bei der modernen Syphilisbehandlung.) Werther.
73 *Exercises to Strengthen Expiration in Treatment of Asthma. (Die Summtherapie des Bronchialasthmas.) L. Hofbauer.
74 "Pulsions"-Diverticulum. (Das pharyngo-ösophageale Pulsionsdivertikel und seine Operation nach der Goldmannschen Methode.) W. Albrecht.
75 Tumor in Spinal Dura. Amberger and Schenk.
76 *Alimentary Disturbances in Infants. (Ernährungsstörungen der Säuglinge.) H. Schelble.
77 Latent Tuberculosis in Children. H. Kleinschmidt.
78 Isolated Rupture of the Mesentery. Saalmann.

June 4, No. 23, pp. 1145-1200

79 *Excessive Obstetric Hemorrhage. (Behandlung bedrohlicher Blutungen während der Geburt.) P. Jung.
80 *Deep Roentgenotherapy in Internal Medicine. (Erfahrungen mit der Tiefentherapie in der inneren Medizin.) A. Schittenhelm and F. Meyer-Betz.
81 *Occult Bleeding as Sign of Open Ulcer. (Ueber das Vorkommen und Verhalten der okkulten Blutungen beim Ulcus ventriculi und duodeni.) I. Boas.
82 Duodenal Ulcer Stimulates Stomach Motor Functioning. (Das röntgenologisch Erkennbare beim Ulcus duodeni.) E. Schlesinger.
83 *Importance of Preventive Antitoxin Treatment of Diphtheria. (Diphtheriebekämpfung und Diphtherieprophylaxe.) W. Braun.
84 Salvarsan in Abortive Treatment of Syphilis. E. Hoffmann.
85 Efforts of Organism to Maintain the Normal Alkaline Reaction of the Blood. (Bedeutung der Wasserstoffionenkonzentration des Blutes und der Gewebe.) L. Michaelis.
86 Industrial Disease and Mortality in Hungary. (Die Berufs-Erkrankungs-, Sterblichkeits- und Unfallverhältnisse der ungarischen Industriearbeiter.) H. Pach. Commenced in No. 22.

71. **Pulmonary Edema.**—Grober emphasizes the importance of stimulating the heart action, relieving it of some of its task by venesection in case of the full-blooded, and by revulsion. Expectorants and narcotics are seldom needed as there is already sufficient impulse to cough and the usual accumulation of carbon dioxid in the blood has a narcotic action. These may fail, however, and each case should be studied individually. He gives an illustration of the preferable technic for intravenous injection of digitalis—there is no time to wait for its action by the mouth—and for venesection.

72. **Treatment of Syphilis.**—There is no doubt, Werther declares, that with salvarsan we can cure at least 50 per cent. of all cases of primary syphilis. He urges that in the secondary stages salvarsan should never be given in a single dose and never alone. A two-weeks' course of mercury should precede it to avoid danger of a reaction on the part of the brain; then salvarsan should be given in addition once a week until three or four doses have been taken. With primary syphilis salvarsan should be given boldly (0.6 gm.), he thinks, and without preliminary mercury. These rules are based on what he has learned in his experiences at Dresden. The spirochetes in the secondary stage must not be allowed to get out from under the influence of the specific treatment as the mercury and salvarsan are eliminated, and consequently treatment must be chronic. The courses should be repeated until the Wassermann is permanently negative. When this has been accomplished a brief but intensive "provocation course" should be given, and if the Wassermann still persists negative, the cerebrospinal fluid should be examined and tested for its sterility. All this is practical for private patients and should be done before we can assure the patient that he is cured. It is of course impossible with hospital patients. Werther gives each as he leaves a card record of treatment to date.

Sixteen cases of neurorecurrence are reported. The symptoms ranged from mere headache, vertigo and tinnitus to epilepsy and dementia. These neurorecurrences generally developed about six weeks after the close of the first course of treatment, begun in the early secondary stage; this includes, he says, the phase of the primary stage when the Wassermann becomes positive. Neurorecurrences used to be encountered before salvarsan was heard of, but they seem to occur now more frequently than before. He has had thirty cases of them among his 3,000 syphilitic patients. The salvarsan has no special affinity for the nervous system but the spirochetes have. Any left from the previous courses of treatment settle in the nervous system by preference.

73. **Expiration Treatment of Asthma.**—Hofbauer has devised an apparatus to record the expiration, neglecting inspiration. This stresses the expiration phase of breathing and has been found extremely useful in curing emphysema and asthma. In some of the worst chronic cases a complete cure was realized with no recurrence in the more than three years to date.

76. **Alimentary Disturbances in Infants.**—Schelble remarks that ten years ago his article would have been entitled "Gastro-intestinal disturbances." The progress made since has permitted the various disturbances to be analyzed and the exact cause for each recognized. He classifies them according as the children are normal or constitutionally or structurally inferior. The food, infection and heat are the subsidiary factors, and he discusses each of the above five categories in turn, holding up the clinical picture of each and pointing out the measures to be applied in each. By such analyses it is possible to apply measures that will ensure successes beyond those realized in any other field of medicine. For the constitutionally inferior, it may be necessary to stop breast-feeding or to reduce all kinds of feeding to the minimum in case of exudative diathesis; rachitis calls for reduction of milk as this often has a lime-wasting influence; other food rich in lime should be given, and a mixed diet with phosphorus and cod liver oil; with anemia the iron metabolism is at fault and less milk should be given as this is poor in iron; a mixed diet should be given early, with meat juice. With a tendency to dropsy, lime salts are needed to combat the accumulation of water in the subcutaneous cellular tissue. Congenital neuropathies and psychopathies may reduce the tolerance for any kind of food, but even then careful guidance of breast-feeding may bring the children into a thriving condition.

79. **Obstetric Hemorrhage.**—Jung remarks in the course of this article that with placenta praevia extraction should never follow version immediately unless the os is completely dilated. Otherwise the cervix is liable to tear and this is extremely dangerous with placenta praevia. It nearly always entails severe hemorrhage, and it is almost impossible to suture the tissues. He says of cesarean section with placenta praevia that it must be reserved for institutions. In the home, constriction of the waist with a rubber tube, suspenders or rope, according to Momburg's technic, has often proved a life-saving measure both with placenta praevia and premature separation of the normally situated placenta.

80. **Deep Radiotherapy in Internal Medicine.**—Schittenhelm and Betz give an illustrated description of fourteen cases to

emphasize the frequent importance of deep roentgenotherapy in lymphemia, lymphosarcoma and cancer. Less benefit was realized in acute leukemia. Most of the patients had been given Roentgen treatment by the older technics previously, and the outcome with the "deep" technic showed the superiority of the latter.

81. **Appreciation of the Importance of Occult Blood with Gastro-Intestinal Ulcer.**—Boas has long been emphasizing the importance of this subject but the last year has demonstrated, he says, that unless blood can be detected in the feces any symptoms suggesting ulcer must come from the complications of the ulcer, adhesions, retraction, etc., as an open ulcer cannot exist without some blood being found in the stool—allowing for the fallibility of all human judgments. The occult blood may not be evident except with the most sensitive tests, and he has found the phenolphthalin test extremely delicate. The one drawback is that the patient has to abstain from meat and fish for eight to twelve days beforehand, but then even the minutest admixture of blood is manifest. This test has shown that occult bleeding is of far greater frequency than hitherto supposed, especially when there are hyperacidity, gastrosuccorrhea, typical tender points or subjective stomach symptoms. The test is so sensitive that after repeatedly determining for several days the complete absence of blood from the stools by the test, ten persons were given from 1 to 3 c.c. of their own blood, obtained by venesection, and stirred into soup. In the following stools the test gave positive findings even with the 1 c.c. of blood, while other technics gave positive findings only with the 3 c.c. The intensity of the reaction in the stools did not always correspond to the amount of blood that had been ingested. Either the hematin was not regularly distributed through the stool or there were inhibitor influences at work. It is possible that many conflicting results can be explained by this.

The scrap of feces is rubbed up with alcohol and 3 to 5 drops of acetic acid and filtrated. Then 10 to 15 drops of the phenolphthalin solution are added and 3 to 5 drops of a 3 per cent. solution of hydrogen dioxid. If blood is present the fluid turns pink or red; if not, it persists yellow or grows yellower. The test is said by Kastle to have proved positive with one part blood in 8,000,000 parts of water. The phenolphthalin solution is an alkaline solution of phenolphthalein reduced by zinc to phenolphthalin: 1 gm. of the phenolphthalein and 25 gm. of potassium hydroxid are dissolved in 100 gm. water and 10 gm. of zinc dust is added. The red mixture is constantly stirred or shaken over a small flame until it is entirely decolored and is then filtered while still hot. A little excess zinc dust helps to keep the solution better. The technic of the test is otherwise that of the ordinary guaiac or Weber test for blood. (It was described in detail in The Journal, Feb. 18, 1911, p. 546.)

83. **Preventive Antitoxin in Treatment of Diphtheria.**—Braun here presents the results of his systematic campaign for prophylaxis during the last two years. In 1909 only about 20 per cent. of the diphtheria patients reached the hospital within the first thirty-six hours of the disease but the educational propaganda since has improved matters so that last year 60 per cent. were received within this interval. The stormier the onset of the disease the more promptly the sick child is taken to the hospital for treatment, and hence the mortality is no higher in the severe epidemics than under ordinary conditions. He gave preventive injections to the other children in the families and only 1.62 per cent. of the 2,218 developed diphtheria later and mostly in a mild form, with four deaths, while nearly 35 per cent. in the non-treated families developed the disease. His experience speaks further for the assumption that the immunity conferred by the antitoxin lasts a long time, possibly for years. He never witnessed anything suggesting anaphylaxis, even on reinjection of the antitoxin, except an exanthem in two cases and in one of these it was the first time any serum had been injected.

Medizinische Klinik, Berlin

May 24, X, No. 21, pp. 879-918

87 *Connection of Appendix with Disease of Genital Apparatus. J. Fabricius. Concluded in No. 22.
88 Swelling in the Vicinity of the Nose with Nasal Affections. (Schwellungen in der Umgebung der Nase bei Nasenerkrankungen.) A. Blumenthal.
89 Fracture of Vertebrae; Diagnosis and Prognosis. (Wirbelbrüche.) P. Ewald.
90 *Salvarsan versus Mercury. (Statistischer Nachweis der Vorzüge der Salvarsanbehandlung vor der Behandlung mit Quecksilber im Frühstadium der Syphilis.) F. Pinkus.
91 Mud Baths in Treatment of Menstrual Disturbances. (Können Gebärmutterblutungen durch Moorbäder geheilt werden?) N. Cukor.
92 Balneotherapy of Chronic Nephritis. Zörkendörfer.
93 Diagnosis of Heart Insufficiency by Changes in Distribution of Blood during Test Work. (Verwendbarkeit der während der Arbeit registrierten Blutverschiebungen zur funktionellen Diagnostik bei Herzkrankheiten.) F. Meyer.
94 Relation of Bacteria to Movements of Nitrogen. (Beziehungen der Bakterien zum Kreislaufe des Stickstoffs.) W. Wangerin.

June 7, X, No. 23, pp. 961-1002

95 Mutilating Obstetric Operations. (Zerstückelnde geburtshilfliche Operationen.) W. Zangemeister.
96 Indications with Calculi in Upper Urinary Passages. (Therapeutische Indikationen bei Steinerkrankungen der oberen Harnwege.) P. Janssen.
97 Post-Diphtheric Polyneuritis Cured by Tonsillectomy. G. L. Dreyfus and J. Schürer.
98 *Friedmann's Remedy. (Ueber Erfahrungen mit dem Friedmannschen Tuberkuloseheilmittel.) B. Scholz.
99 The Seashore in Treatment of Surgical Tuberculosis. (Thalassotherapeutische Erfolge.) Häberlin.
100 Effect of Thermal Baths on Circulation. (Verhalten des Circulationsapparats bei natürlichen kohlensäurehaltigen Thermalsolbädern.) J. Strasburger.

87. **Relations between Appendix and Disease of Genital Apparatus.**—In this review of his experience Fabricius remarks that in two cases he found the appendix soldered to the left ovary and tube and once to the umbilicus. In the latter case there was a tuberculous process in the appendix. In a boy of 12 the appendix was soldered to the testicle. Criminal abortion with perforation of the uterus and secondary appendicitis caused death in one of his two cases of this kind. In several cases of supposed acute appendicitis the trouble proved to be merely the localization in the appendix of a general typhoid infection or of enteritis. In a large group of cases of supposed acute appendicitis, the normal temperature, pulse up to 140 and signs of anemia corrected the diagnosis to ruptured extra-uterine pregnancy. In 6 out of 200 cases of the latter, there was concomitant acute disease in the appendix. The probabilities are in favor of acute appendicitis when the temperature is high and the extra-uterine pregnancy ruptures secondarily to this. A tendency to extra-uterine pregnancy and disease of the adnexa is often entailed by appendicitis, even when mild, and a tuberculous process in the appendix region is responsible for many a chronic appendicitis. The slight rise in temperature in the afternoon is seldom traced to this, its true cause. In one case a young woman's appendix was removed for acute trouble, and a year later the right ovary developed a tuberculous process.

90. **Salvarsan versus Mercury.**—Pinkus is chief of the service giving specific treatment to prostitutes at Berlin and it is said to have been the experiences here which inspired Dreuw to his recent attack on salvarsan. Dreuw stated that the results under the old mercury were better than at present. To this Pinkus replies that recent reexamination of 1,000 prostitutes who had been given mercury treatment years before showed a positive Wassermann in over 80 per cent. and tertiary manifestations in over 50 per cent. which he regards as the complete *Fiasko der symptomatischen Hg-Behandlung*. Comparing the patients with recent primary syphilis treated with and without salvarsan, he found that 84 per cent. of 100 in the latter class had further manifestations during the first year, while this was true of only 69 per cent. of 174 given salvarsan treatment. Among 300 syphilitics in his private practice, 81 per cent. of 250 given mercury alone had further manifestations during the first year, but only 35 per cent. of 50 given salvarsan alone or

with mercury. It is impossible to compile such accurate records for prostitutes as they are given treatment only when manifest symptoms develop.

98. **Friedmann's Remedy.**—Scholz reports from Frankfurt twenty cases of pulmonary tuberculosis given the Friedmann treatment with no benefit in any instance. All reacted to the *Simultaninjektion* with high fever and severe malaise, slight cyanosis and headache preventing sleep. In four cases the disease continued a rapidly progressive course; one lost four pounds and in another patient with surgical tuberculosis a new process developed in the foot under the treatment. He remarks in conclusion that the injections of the Friedmann remedy are in various directions dangerous and even in cases without direct injury to the patient they are frequently followed by right annoying phenomena. He consequently wishes to be classed with those who warn urgently against further application of the remedy.

Therapie der Gegenwart, Berlin

June, LV, No. 6, pp. 241-288

101 *Importance of Repeated Examination of the Sick. (Ueber fortlaufende Krankenbeobachtung.) E. Neisser.
102 Salvarsan in Scarlet Fever; Forty-Seven Cases. Lenzmann.
103 *Treatment of Tuberculous Laryngitis by the Pfannenstill and Friedmann Technics. W. Sobernheim.
104 *Pulmonary Tuberculosis in Children. H. Vogt.
105 *Friedmann's Remedy in Surgical Tuberculosis. R. Mühsam and E. Hayward.

101. **Repeated Examinations.**—Neisser has made a point for three years of keeping patients under prolonged observation at the Stettin hospital. His method is to keep an alphabetical record of the interesting internal cases. One of the nurses keeps a calendar with the names of these patients entered at various dates, and she sends to each when she comes to his name a printed notice asking him to return to be examined and advised. No treating is done, but the patients realize that an interest is taken in them and that it is to their benefit to return and be examined anew. The prosector of the institution also keeps an alphabetical record of all those under this continuous examination in the institute. Of the 126 patients thus registered and reexamined in the last three years, only 11 failed to appear in response to the notice. Neisser hopes in this way to throw light on the connection between the tonsils and recurring articular rheumatism, on the true significance of albuminuria, on what becomes of those with anacidity, and on similar problems. The plan requires the collaboration of only the chief of the service and one nurse until the case comes to the prosector.

103. **Friedmann's Remedy.**—Sobernheim reports thirteen cases of tuberculous laryngitis treated by the Pfannenstill two-route method—potassium iodid taken internally with ozone or hydrogen dioxid applied locally—the aim being to generate a chemical reaction in the diseased tissues. He was not favorably impressed with the results in these cases but the method proved very useful in two cases of lupus of the nasal mucosa, a complete cure being obtained in both cases after a few weeks. He applied the Friedmann remedy in four cases of laryngeal tuberculosis; one patient died, one required an operation later and in the others the disease has progressed. The treatment is qualified as having completely failed in these laryngeal cases.

104. **Pulmonary Tuberculosis in Children.**—Vogt remarks that it is a tendency of the day to pay far greater attention to treatment than to conscientious testing of what is accomplished by our treatment. He says that experience has shown that induced pneumothorax is quite effectual for young children, even when both lungs are involved if the other side is not too extensively diseased. He regards the pneumothorax treatment as the most important and reliable measure at our command for severe and progressing cases in children. It is rarely applicable for infants as the disease generally spreads too rapidly to other organs, but with older children we may be able with it at least to prolong life for years. Time alone will tell whether the cure is permanent. He does not consider that there is any testimony to date that tuberculin treatment is really effectual for pulmonary tuberculosis in children. There is no evidence to date that any animals have been cured by tuberculin. He agrees with Czerny that the results of tuberculin treatment do not surpass in any respect those obtained without it.

105. **Friedmann's Remedy.**—Mühsam and Hayward report from the Moabit Hospital at Berlin 15 cases of surgical tuberculosis given Friedmann treatment, including 5 children. In 10 cases no benefit was apparent; in the 5 others the progress was favorable but whether to attribute this to the injections or to the other measures applied is a question. The only case in which the serum seemed to benefit was in tuberculous peritonitis in a child, and of course it is impossible to ascertain the actual pathologic-anatomic conditions in the peritoneum. Most of the patients suffered materially from the direct consequences of the injections and their general health became impaired. Some of them developed hematuria, diarrhea and eruptions. Their final conclusion is that the Friedmann remedy is unadapted for and ineffectual in the treatment of surgical tuberculosis. They give full details of their 15 cases.

Wiener klinische Wochenschrift, Vienna

May 28, XXVII, No. 22, pp. 741-784

106 Induced Transient Albuminuria. (Auslösung transitorischer Albuminurien beim Menschen.) A. Schiff.
107 Experiences with Treatment of Uterine Myoma. R. Marek.
108 *Habitual Dislocation of the Patella. H. Lorenz.
109 Myomas of Esophagus and Cardia. M. Milovanovic.
110 *Hexamethylenamin Urine Reaction. S. Grosz.

108. **Habitual Dislocation of the Patella.**—Lorenz took a tuck in the capsule according to Mikulicz' technic. This shortening of the capsule proved a simple procedure and a complete success. It is not even necessary to open the joint as the fold can be taken up and sutured without direct inspection. One case is reported in detail.

110. **Reaction from Hexamethylenamin.**—Gross states that in testing the urine for minute amounts of albumin by Freund's method, he noticed a fine-grained sediment in a number of cases and investigation always revealed that these persons had been taking hexamethylenamin. This is proving a sensitive test for the presence of hexamethylenamin. He adds to the urine enough 10 per cent. acetic acid or hydrochloric acid to bring the total to five-fourths or four-thirds of the original amount. Then he adds, a drop at a time, a saturated aqueous solution of mercuric chlorid (about 7 per cent.), continuing this as long as the fluid continues to grow more turbid. He adds that the presence of free formaldehyd in the urine is best evidenced by the inability of micro-organisms to proliferate when the urine in question is inoculated with bacteria and kept at 37 C.

Zeitschrift für klinische Medizin, Berlin

LXXX, Nos. 1-2, pp. 1-216. Last indexed May 9, p. 1516

111 Estimation of Diabetic Acidosis by Determination of Carbon-Dioxid Tension in the Air in the Lungs. L. S. Fridericia.
112 Determination of Acidosis and Its Clinical Availability in Diabetes. M. Lauritzen.
113 Modified Technic for the Blood-Count Apparatus. (Eine Modifikation der Hayemschen Lösung.) G. Jörgensen.
114 Orthodiagraphy for Controlling Action of Digitalis in Therapeutics. W. Libensky.
115 Landry's Paralysis; Fatal in Eight Days. M. Chanutina.
116 *Typhoid Bacilli in the Blood. (Ergebnisse der bakt. Blutuntersuchung in 50 Fällen von Abdominaltyphus.) S. Saski.
117 Tubercle Bacilli in the Blood-Stream and Inoculation of Animals. F. Klemperer.
118 *The Manifold Symptoms of Uremia. (Zur Klinik und Einteilung der Urämie.) E. Reiss.
119 Transfusion of Blood with or without Its Serum Content. M. Levy.
120 Abnormal Proliferation of Myeloid Tissue Without the Blood-Picture of Leukemia. (Die generalisierte aleukämische Myelose und ihre Stellung im System der leukämischen Erkrankungen.) H. Hirschfeld.
121 *Availability of Different Sugars for Testing Liver Functioning. (Bedeutung der verschiedenen Zuckerproben für die Beurteilung der Leberfunktion.) F. Wagner.
122 *Objective Signs of Neurasthenia. O. Schellong.

116. **Typhoid Bacilli in the Blood.**—Saski found typhoid bacilli in the blood during the first week of typhoid fever in nearly all the fifty patients examined. They disappeared

from the blood in the following weeks in most of the cases, but in some, including some mild cases, they could be found in the blood all through the fever period. The findings during the first week were positive in larger numbers of cases than the agglutination test, but after the first week the proportion was reversed.

118. **Uremia.**—Reiss discusses in this first installment of his article the asthenic and epileptiform types of uremia, giving a detailed history of six cases of the former and two of the latter. The first type is distinguished by drowsiness, apathy, increasing lassitude and possibly sudden death from heart failure. The metabolic findings show defective elimination of substances through the kidneys, and loss of power of concentration, inhibition of the diluting power of the blood-serum, increased residual nitrogen and higher osmotic tension in the blood. There may be headaches, vertigo, vomiting and pruritus, but the clinical picture is dominated by the progressive weakening in body and mind.

The other type is distinguished by epileptiform convulsions; they return periodically with exacerbation of the nephritis and subside as the nephritis improves and likewise under potassium bromid. The mind is unimpaired during the intervals between attacks, and no appreciable modification of the urine or composition of the blood is apparent. No influence from change of diet can be detected in this form of uremia. In one of the cases reported no benefit was observed even from restriction to tea and sweetened water, but the tendency to convulsions was promptly arrested by potassium bromid. The patient was a man of 43 with kidney disease for four years. In the last year he had had three attacks of convulsions; they resembled in nearly every respect an epileptic seizure with unconsciousness for five to fifteen minutes.

121. **Alimentary Sugar Test of Liver Functioning.**—The findings in 196 cases are compared, with tabulation of the details, all testifying, Wagner asserts, to the great importance of galactosuria for the differential diagnosis of liver diseases. It indicates functional derangement, and generally of the entire parenchyma of the liver. It differentiates between catarrhal jaundice and other forms of jaundice, especially that with gall-stones and disease of the gallbladder. The only restriction to be made is that in the jaundice in the second stage of syphilis there is the same response as with simple catarrhal jaundice. The levulose test proved far less exact and reliable in his experience than the galactose test. No connection between alimentary dextrosuria and liver affections was discovered in his research. He found that the sensitiveness of the galactose test could be materially enhanced by using with it Liebig's meat extract. Alcohol, especially brandy, taken in large amounts with or before the galactose, reduced very much the tolerance for galactose.

122. **Signs of Neurasthenia.**—Schellong discusses the exaggerated knee-jerk, vasomotor reddening, tremor of the eyelids, tongue and fingers, and acceleration of the pulse as objective indications of neurasthenia. He has been examining for these signs in hundreds of healthy persons and found each of them in from 25 to 65 per cent. of those examined. A pulse of 88 and over was evident in 37 per cent. of 1,300; tremor of the eyelids in 64 per cent. of 524, and exaggeration of the knee-jerk in 65 per cent. of 800. None of these signs indicates neurasthenia, but when several are noted in one person instability of the nervous system is beyond question. but this does not necessarily mean neurasthenia. The knee-jerk and tremor of the lids are the least significant of the above.

Zeitschrift für Urologie, Berlin

May, VII, No. 5, pp. 353-432

123 Modern Tests of Functional Capacity of the Kidneys. (Nierenfunktionsprüfung.) R. Bauer and P. Habetin.
124 *Disturbances in Urogenital Functioning with Disease of the Posterior Urethra, Especially of the Colliculus Seminalis. J. Leyberg.

124. **Urogenital Disturbances with Irritation in the Posterior Urethra.**—Leyberg gives a colored plate of the endoscopic findings in four cases. They cleared up a long puzzling syndrome which included various urogenital disturbances, even impotence in some of the cases. There was a history of abnormal sexual habits, coitus interruptus, etc., in every case, evidently entailing an irritable condition in the verumontanum. This in turn may induce psychic impotence, and correction of the local affection may have to be supplemented by psychic treatment. But the latter alone is sure to fail, while once convinced of the local cure the mind of the patient is at rest and a complete cure often follows without further psychotherapy.

The symptoms in one case, after eight years of coitus interruptus, were periods of erections and unduly frequent desires to urinate during the day, with smarting and itching. The man of 40 was otherwise healthy and with a healthy family. A six-weeks' course of irrigation treatment for the assumed catarrhal affection gave no relief; endoscopy then revealed extreme congestion and swelling of the colliculus and numerous papillomatous excrescences. They were destroyed with the actual cautery under local anesthesia, and the region was cauterized ten days later with 20 per cent. silver nitrate. Two weeks later the still very large colliculus was cauterized anew with the actual cautery. The posterior urethra was rinsed out every second day through the course with 1 per ten thousand silver nitrate, and normal conditions were completely restored at last in every respect.

Zentralblatt für Chirurgie, Leipsic

XLI, Nos. 20-21, pp. 841-928

125 High-Curving Laparotomy Incision. (Der bogenförmige Bauchschnitt im Epigastrium.) Drüner.
126 Advantages of Resection of Cancer of the Cardia from the Rear. (Die Radikaloperation des Karzinoms der Cardia und des abdominalen Oesophagus.) H. Boit.
127 *Direct Implantation of Nerve in Muscle and Neurotization of Muscle Corrects Paralysis of Trapezius. (Direkte Nerveneinpflanzung in den Muskel und muskuläre Neurotisation bei einem Falle von Cucullarislähmung.) V. v. Hacker.
128 Improved Technic for Plaster Bandage with Hare-Lip Operation. (Zweckmässige Modifikation des Heftpflasterverbandes bei Hasenschartenoperationen.) R. Hagemann.

127. **Neurotization of Paralyzed Muscles.**—Hacker reports most excellent results in a case of complete paralysis of the trapezius muscle consequent on injury during an operation on tuberculous lymph-nodes in the neck. He implanted the central stump of the spinal accessory motor nerve in the midst of the paralyzed trapezius muscle, and also implanted the nerve entering the margin of the muscle in a lengthwise slit in a nerve of the plexus. Supplementary to this he sutured together the intact levator ang. scap. and the paralyzed trapezius. The patient has gradually recovered almost perfect functional control of her arm, confirming the practicability and success of these methods of neurotization of a paralyzed muscle.

Zentralblatt für Gynäkologie, Leipsic

XXXVIII, Nos. 20-21, pp. 713-792

129 *Medicolegal Differentiation of Maternal and Fetal Blood. (Ist die Unterscheidung mütterlichen und fötalen Blutes nach neueren Methoden möglich?) W. Vollhardt.
130 Changes in Ovary under Radiotherapy. J. Schiffmann.
131 Abdominal Operations for Uterine Cancer. (Abdominale Radikaloperation des Gebärmutterkrebses nach dem Material des Obuchow-Frauenhospitals.) L. A. Kriwsky.
132 Laceration of the Perineum. (Sekundärnaht bei kompletten Dammrissen.) S. R. Rosenstein.

129. **Medicolegal Differentiation of Maternal and Fetal Blood.**—Vollhardt states that he was unable to obtain decisive findings with the Abderhalden reaction applied to blood that was not fresh and sterile or to hemolytic serum or extracts of blood-stains, not even with the Corin and Welsch modification. This method is therefore not practical for medicolegal purposes in this line. But he found the Neumann and Herrmann test extremely reliable, so much so that negative findings speak positively for child's blood. This technic is based on the constant increase in the fat and lipoid

content of the blood during pregnancy. In the new-born the lipoid content is far below the normal standard. There is much to suggest that increased lipoidemia is connected in some way with the functioning of the ovaries. Vollhardt applied this test to 500 specimens of retroplacental and umbilical-cord blood, drying them on linen protected from the sunlight. An alcoholic maceration of the separate spots was then treated with water or acid and the maternal blood always grew turbid while the child's blood mixture was always limpid or only faintly opalescent.

Gazzetta degli Ospedali e delle Cliniche, Milan

XXXV, Nos. 56-64, pp. 585-680

133 Total Gangrene of Kidney from Phlegmonous Perinephritis. P. Azara.
134 Extraperitoneal Suspension of Uterus to Cure Prolapse. G. Frattin.
135 *Possibility of Making a Collateral Outlet for the Parotid Gland into the Submaxillary Gland.* G. Ferrarini.
136 Three Children in One Family Taken with Severe Typhoid the Same Day. E. Tognoli.
137 Much's Granula a Hibernating Form of Tuberculosis Virus. S. Mircoli.
138 Favorable Experiences with Antityphoid Vaccination in Italy. G. Collina.
139 *The Urochromogen Reaction. (Valore e natura della reazione urinaria di Weisz.) D. P. Tuliato.
140 *Tetanus Antitoxin in Prophylaxis. (Efficacia delle iniezioni contemporanee *di siero antitetanico nella profilassi del tetano.)* G. Tizzoni.

139. **The Urochromogen Reaction.**—Tuliato has been studying Weiss' potassium-permanganate reaction and found it positive in 67 per cent. of all the cases of various diseases which terminated fatally. It is not specific for any one disease, but is a sign of the gravity of the condition indicating a fatal outcome if it persists constant and intense. He explains it as due to oxidation of albuminoid substances originating in the decomposition of cells under the direct or indirect action of pathogenic germs. (Compare article in The Journal, June 13, 1914, p. 1886.)

140. **Tetanus Antitoxin in Prevention.**—Tizzoni states that tetanus antitoxin has abundantly proved its efficacy as a preventive in the recent Italian campaigns in northern Africa. The only question now is one of dosage, and this depends on the antitoxin units in the separate specimens. They may vary widely in this respect even in the same makes. The manufacturers should specify on each vial the exact unit content. In the cases in which the dose was too small to ward off the tetanus entirely, it proved exceptionally mild in his experience.

Policlinico, Rome

XXI, Nos. 19-20, pp. 669-740

141 *Disturbances* from Diverticulum of Meckel; Three Cases. V. Craglietto.
142 Neosalvarsan *in Progressive Paralysis;* Five Cases. V. Massarotti.

May, Surgical Section, No. 5, pp. 205-256

143 Indications for Tardy Extraction of Bullets from Skull. (Estrazione tardiva dei proiettili dall'interno del cranio.) G. Mingazzini and R. Alessandri.
144 Plastic Operations to Close Defects in the Dura. (Omoioplastiche della pachimeninge.) L. C. Zapelloni. Commenced in No. 4.
145 Wounds of Vertex by Way of the Base of the Skull. (Sulle ferite da punta dell'encefalo attraverso la base del cranio.) S. Solieri.

Riforma Medica, Naples

May 23, XXX, No. 21, pp. 561-588

146 *Functional Disturbances in the Pancreas. (Ricerche sulle alterazioni funzionali del pancreas.) S. Fichera.
147 Jaundice from Pressure of Echinococcus Cyst in the Liver. O. Finzi.

146. **Disturbances in Pancreas Functioning.**—Fichera reviews the technic of and the findings with various means for testing the functional capacity of the pancreas. The list is a long one but none seems to be reliable. We have no means to date for correct estimation of the functional condition of this organ, and we can judge of it only by comparing the results of various tests.

Brazil-Medico, Rio de Janeiro

May 8, XXVIII, No. 18, pp. 173-182

148 Syphilitic Arthritis. N. [illegible]

Semana Medica, Buenos Aires

XXI, Nos. 15-18, pp. 793-1004

149 *Action of Artificial* Organic Stains on Diastasic Hydrolysis of Albuminoids. (Influence de la concentration des solutions de colorants acides et basiques sur la protolyse de l'albumine par la pepsine dans un milieu acide.) H. Damianovich and L. Guglialmelli.
150 *Sanitary Regulation of Railroad Transportation. (Reglamentacion de la higiene en los ferrocarriles.) M. S. Ortiz.
151 Difficulty of Diagnosing Glaucoma under Certain Circumstances. J. S. Fernandez.
152 Spectrum and Crystallization of the Blood. (Nueva tecnica para la espectroscopia y cristalografia sanguinea.) Maestre and A. Lecha-Marzo.
153 Present Status of Treatment of Ozena. J. C. Correa.
154 Natural and Synthetic Organic Bodies. P. J. Pando.
155 Chorio-Epithelioma. P. S. Mimbela.
156 *Diagnostic Import of Diastase Content of Urine. E. Mariño.
157 Polar Cataract. J. M. Zubizarreta.
158 Regulations Proposed for Industrial Hygiene. J. M. Obarrio.

150. **Sanitary Regulation of Railroads.**—The official decree regulating in Argentina the hygiene of trains, transportation of the sick, of animals and foodstuffs, and the hygiene of employees is here given in full. The regulations are very progressive and are as suggested by Dr. J. Penna, chief of the National Board of Health.

156. **The Starch-Digesting Ferments in the Urine as Aid in Differentiating.**—Mariño has been studying the elimination of diastase in the urine in the course of kidney and pancreas disease and diabetes, following Wohlgemuth's technic. In health the figure ranges from 25 to 100 units, but with nephritis and diabetes the diastase content is much below these figures. With pancreas disease, especially necrosis of the pancreas, an excessively large amount of diastase is eliminated in the urine. With pernicious anemia and with secondary anemia the proportion is also subnormal. The test is made with a 1 per cent. solution of starch and a set of test-tubes with progressively diluted urine. In 19 cases of diabetes the figure ranged from 0 to 12.5 units with a single exception in which it reached 25; this case was distinguished further by the rapid recovery of the patient. In 32 cases of nephritis the figure ranged from 6 to 12.5 and 25 in six cases and 50 in two. In the eleven cases of pernicious anemia the range was from 6 to 12.5 in all; and in twenty-five cases of secondary anemia from 6 to 12.5, with a few reaching 25.

In the case of a woman of 38 with acute necrosis of the pancreas the figure reached 200, as also in a case of cancer of the pancreas in a man of 66. The pancreas affection was diagnosed by this excessive diastase content in the urine in this latter case. In two cases of sclerosis of the pancreas, without complete obstruction of the outlet, the figure was 100.

Hospitalstidende, Copenhagen

May 20, LVII, No. 20, pp. 609-672

159 Glaucoma and Prophylaxis. (Om Aarsag og Opstaaelsesmaade for det saakaldte Glaukoma malignum og om Midler til dets Modvirkning.) C. F. Heerfordt.

Ugeskrift for Læger, Copenhagen

May 14, LXXVI, No. 20, pp. 911-970

160 *Hour-Glass Stomach. (Om Timeglasventrikler.) T. E. H. Thaysen.

160. **Hour-Glass Stomach.**—Thaysen says that repeated roentgenoscopy will reveal that spasmodic contraction of the stomach is responsible for disturbances far more often than generally credited. The apparent stenosis or constriction may be then seen subsiding and returning, instead of the persisting condition otherwise assumed from the findings at a single examination. Four cases are described and illustrated of this intermittent hour-glass stomach. In a further series of six cases the hour-glass contraction was the work of adhesions or cicatricial retraction. Treatment of course is that for gastric ulcer; if not very pronounced, as the ulcer heals the spasmodic contraction will cease. But with organic persisting hour-glass contraction there is little hope of improvement from any but surgical measures. This can be insisted on with greater emphasis as ulceration is almost inevitable in an hour-glass stomach sooner or later.

PROCEEDINGS OF THE ATLANTIC CITY SESSION

MINUTES OF THE SIXTY-FIFTH ANNUAL SESSION OF THE AMERICAN MEDICAL ASSOCIATION, HELD AT ATLANTIC CITY, JUNE 22-26, 1914

HOUSE OF DELEGATES

First Meeting—Monday Morning, June 22

The House of Delegates met in the Solarium of the Traymore Hotel and was called to order at 10:10 a. m. by the President, Dr. John A. Witherspoon, Nashville, Tenn.

The preliminary report of the Committee on Credentials was called for.

Dr. D. Chester Brown, Connecticut, Chairman, reported that the Committee on Credentials had seated seventy-one delegates who had presented credentials which conformed to the rules of the House. (During the morning meeting twenty-three additional members were seated.)

Dr. Dwight H. Murray, New York, moved that the report be received and the accredited delegates be seated as members of the House of Delegates.

Motion seconded by Dr. G. Lane Taneyhill, Maryland, and carried.

The roll recorded seventy-three delegates in attendance.

On motion of Dr. Arthur T. McCormack, Kentucky, duly seconded, the reading of the minutes of the sixty-fourth annual session was dispensed with and approved as published.

The President asked the indulgence of the House, saying that he would make no formal address as he had just risen from a sick bed to come to the meeting. He expressed his appreciation of the work done by the House, however, and of the honor done him in electing him to the presidency.

Reference Committees

He then appointed the following reference committees:

SECTIONS AND SECTION WORK

Hugh Cabot	Massachusetts
Melville Black	Section on Ophthalmology
W. T. Mulligan	New York
J. A. Koch	Illinois
F. C. Warnshuis	Michigan

RULES AND ORDER OF BUSINESS

G. Wythe Cook	District of Columbia
C. H. Beecher	Vermont
William R. Tipton	New Mexico
G. Lane Taneyhill	Maryland
G. V. I. Brown	Section on Stomatology

MEDICAL EDUCATION

H. Bert Ellis	California
Fred Lund	Section on Surgery
W. H. Sanders	Alabama
Adolph Koenig	Pennsylvania
C. D. Shelby	Ohio

LEGISLATION AND POLITICAL ACTION

E. J. Goodwin	Missouri
Edwin Walker	Indiana
Hugh Young	Maryland
E. J. McKnight	Connecticut
Holman Taylor	Texas

HYGIENE AND PUBLIC HEALTH

John W. Kerr	U. S. P. H. Service
W. S. Lalor	New Jersey
Morgan Smith	Section on Preventive Medicine and Public Health
A. M. Harvey	Illinois
Frank Y. Gilbert	Maine

AMENDMENTS TO CONSTITUTION AND BY-LAWS

W. A. Jayne	Colorado
Floyd M. Crandall	New York
Charles Richard	U. S. Army
Claude A. Thompson	Oklahoma
Perry Bromberg	Tennessee

REPORTS OF OFFICERS

Thomas D. Davis	Pennsylvania
E. A. Hines	South Carolina
Robert M. Kennedy	U. S. Navy
A. R. Mitchell	Nebraska
Rock Sleyster	Wisconsin

CREDENTIALS

D. Chester Brown	Connecticut
Henry L. Elsner	New York
H. A. Royster	North Carolina
B. R. McClellan	Ohio
C. E. Cantrell	Texas

MISCELLANEOUS BUSINESS

A. T. McCormack	Kentucky
W. E. Anderson	Virginia
L. J. Hirschman	Michigan
W. C. Lyle	Georgia
A. W. McAlester	Missouri

The Secretary presented his report.

Report of the Secretary

To the Members of the House of Delegates of the American Medical Association:

For the year 1913-14, I submit the following report:

MEMBERSHIP

The membership of the various constituent state associations, which constitutes the membership of the Association, according to the records in the Secretary's office, May 1, 1914, is shown in the table on page 30.

FELLOWSHIP

The Fellowship of the American Medical Association on May 1, 1913, was 37,913. During the past year, 344 Fellows have died, 1,553 have resigned, 491 have been dropped as not eligible, 457 have been dropped for non-payment of dues and 29 have been removed from the rolls on account of being reported "not found," making a total of 2,850 names to be deducted from the Fellowship roll. There have been added 5,990 names to the Fellowship roll, of which 4,416 were transferred from the subscription list. The Fellowship of the American Medical Association on May 1, 1914, was 41,029, a net increase for the year of 3,116.

This gain in the number of Fellows is due largely, as in previous years, to circularizing subscribers to THE JOURNAL who were eligible, urging them to become Fellows.

AD INTERIM COMMITTEE CHANGES

Since the last meeting of the House of Delegates, June 19, 1913, the following appointments have been made by the President:

Committee on Mode of Commemorating the Completion of the Panama Canal, J. H. White, New Orleans, Chairman, vice Isadore Dyer, New Orleans, resigned. William C. Braisted, U. S. N., vice Presley M. Rixey, U. S. N., resigned.

In addition, the death of Dr. S. Weir Mitchell, chairman of the Committee on Memorial to Medical Officers who Died in the Civil War, leaves a vacancy on that committee.

SECTION ON GASTRO-ENTEROLOGY AND PROCTOLOGY

At the Minneapolis session, the House of Delegates adopted the recommendation of the Reference Committee on Sections and Section Work, endorsing the "formation of a section to be entitled the 'Gastro-Enterologic and Proctologic Section of the American Medical Association' under the following conditions:

"First: That the American Gastro-Enterologic Society and the American Proctologic Society be disbanded and hold their meetings jointly as a section of the American Medical Association to be designated as above.

"Second: We also recommend that the number of papers to be read at any annual session be limited to fifteen."

This section has not been formed, as these conditions were not met. We quote from a letter addressed to the chairman of this Reference Committee of the last house, by Dr. Franklin W. White, secretary of the American Gastro-Enterological Association:

> "The American Gastro-Enterological Association was not represented at *Minneapolis*, and has taken no part as an Association in the movement to bring about the formation of a new Section of the A. M. A.
>
> "A vote of our members was taken by letter this fall with the result that about 90 per cent. are opposed to disbanding."

Constituent Association of	No. Counties in State	No. Component Societies in State Assn.	No. Co.'s in State Not Org'z'd		No. Physicians in State (4th Ed. Directory)	No. Members of State Association		No. A. M. A. Fellows in State	No. Subscribers to Journal in State*
			1913	1914		1913	1914		
Alabama	67	67	...	...	2,518	1,617	1,760	364	220
Arizona	14	11	4	3	291	139	169	118	60
Arkansas	75	70	9	5	2,652	994	1,255	386	205
California	59	37	21	22	5,353	2,445	2,463	1,831	755
Colorado	63	37	25	26	1,782	740	791	535	225
Connecticut	8	8	...	...	1,630	864	914	512	205
Delaware	3	3	...	...	263	102	99	54	29
Dist. of Columbia	....	....	...	...	1,421	587	557	379	311
Florida	50	25	27	25	1,177	353	412	228	221
Georgia	148	86	60	62	3,255	1,106	1,314	493	575
Idaho	33	13	15	20	446	95	116	89	83
Illinois	102	101	...	1	10,286	5,275	6,055	3,917	1,625
Indiana	92	89	4	3	5,001	2,392	2,420	1,115	402
Iowa	99	96	3	3	3,733	1,653	2,019	1,339	346
Kansas	105	81	23	24	2,840	1,370	1,240	689	301
Kentucky	120	116	3	4	3,621	2,250	2,132	688	187
Louisiana	64	39	21	25	2,030	957	962	416	[illegible]
Maine	16	15	1	1	1,200	623	625	314	77
Maryland[1]	23	22	2	2	2,232	1,081	1,089	628	435
Massachusetts[2]	14	18	...	...	5,798	3,450	3,440	1,953	812
Michigan	83	81	4	2	4,180	2,232	2,390	1,469	691
Minnesota	86	83	5	3	2,381	1,426	1,380	1,193	370
Mississippi	79	76	7	3	2,047	875	1,090	279	126
Missouri[1]	114	101	9	14	6,224	2,938	3,160	1,591	521
Montana	35	15	18	20	578	243	260	172	114
Nebraska	93	68	25	25	1,867	832	996	541	262
Nevada	16	3	11	13	155	82	74	59	26
New Hampshire	10	10	...	...	705	502	503	232	49
New Jersey	21	21	...	...	3,012	1,483	1,575	902	305
New Mexico	26	9	11	17	447	175	196	123	63
New York	62	58	4	4	15,301	7,330	7,410	4,430	1,824
North Carolina	100	93	10	7	1,987	1,115	1,130	376	308
North Dakota	50	47	10	3	577	350	345	267	77
Ohio	88	85	...	3	7,912	3,495	3,650	1,959	795
Oklahoma	77	68	5	9	2,612	1,111	1,131	449	195
Oregon	34	31	6	4	1,150	393	442	271	223
Pennsylvania[3]	67	63	4	4	11,611	6,014	6,528	3,930	1,824
Rhode Island[2]	5	6	...	...	761	370	377	271	166
South Carolina	44	37	7	7	1,362	712	728	335	337
South Dakota	65	58	8	7	674	292	304	238	110
Tennessee	96	61	35	35	3,389	1,380	1,453	503	323
Texas	250	175	91	75	6,024	3,059	3,065	1,110	435
Utah	27	9	20	18	446	234	218	161	70
Vermont	14	14	3	...	685	387	353	169	87
Virginia[4]	100	38	...	...	2,420	1,591	1,593	483	281
Washington	39	21	19	18	1,644	874	840	571	251
West Virginia	55	43	12	12	1,678	865	915	449	181
Wisconsin	71	70	...	1	2,737	1,700	1,760	1,147	401
Wyoming	22	5	11	17	237	121	120	62	52
Canal Zone	....	....	...	...	89	86	75	21	0
Hawaii	....	....	...	...	146	73	73	29	7
Porto Rico	....	....	...	...	274	......	151	23	26
Philippine Is.	....	....	...	...	745	105	116	29	51
Totals	2,984	2,383	553	547	143,586	70,538	74,235	39,892	17,865
Honorary Fellows and Fellows listed at foreign addresses								71	......
Fellows in government services								1,068	......
Journals to *foreign addresses*, etc.								......	2,177
Grand totals								41,031	20,042

* Not including Fellows of American Medical Association.

Note.—The number of members of the different associations stated in this table is in accord with the membership of the several associations as they were reported to the Secretary on May 1, 1914.

The lack of an effective uniform system for reporting the membership of the state associations accounts for whatever discrepancies this table shows and detracts from the value of the statement.

Component societies are those societies which compose the state association. A component society may include one county or more.

[1] The state of Maryland has 23 counties and the city of Baltimore; Missouri has 114 counties and the city of St. Louis.

[2] These state associations are divided into district societies, and these are listed in the table as component societies. Some of these districts are smaller and some larger than the county, the county lines being ignored.

[3] Provision is made for the physicians in each of these counties to join the component society in an adjoining county.

[4] Virginia has recently adopted the plan of organization and is now establishing component county medical societies.

RESOLUTION FROM THE SECRETARIES OF SECTIONS

In accordance with the action taken by the House of Delegates at the Minneapolis meeting a conference of secretaries of the sections of the Association was held at the headquarters in Chicago on Nov. 6, 1913. The day was devoted to a discussion of the work of the Scientific Assembly and on motion the conference requested the House of Delegates to consider the advisability of dividing the sections into two groups—general sections and special sections, the former to include Practice of Medicine, Surgery, Pharmacology and Therapeutics, Pathology and Physiology and Preventive Medicine and Public Health; the second group to comprise the remaining sections, i. e., Obstetrics, Gynecology and Abdominal Surgery, Ophthalmology, Laryngology, Otology and Rhinology, Diseases of Children, Stomatology, Nervous and Mental Diseases, Dermatology, Genito-Urinary Diseases, Hospitals, Orthopedic Surgery—and that Section 13, Chapter 11 of the By-Laws be so amended as to provide that at any annual session of the Scientific Assembly a Fellow shall be privileged to present one paper before a general section and a second paper before a special section.

Preambles and resolutions adopted by the Medical Society of the State of California inviting the American Medical Association and other organizations to arrange for their 1915 sessions to be held in San Francisco are herewith transmitted to the House of Delegates, together with a record of the action of the Medical Faculty of the Leland Stanford Junior University on the same topic.

ACTION OF THE MISSISSIPPI ASSOCIATION

The Mississippi State Medical Association reports through its secretary to the Secretary of the American Medical Association that at its annual session the Committee on Secretary's Report offered the following recommendation which was unanimously passed

> We recommend that the secretary be instructed to inform the A. M. A. that the component county medical societies of this state, *and they alone*, will pass on applications for membership in this body.

Preambles and resolutions adopted by the Medical Society of the State of New York recommending an amendment to Section 7 of the Food and Drugs Act are herewith transmitted to the House of Delegates, as is a communication from the Legislative Committee of the Medical Society of the County of Suffolk, conveying preambles and resolutions urging that provisions be made for the mental examination of immigrants.

Respectfully submitted,
Alexander R. Craig, Secretary.

Dr. Arthur T. McCormack, Kentucky, moved that the report be received and the various resolutions be referred to the appropriate committees, and the report itself be referred to the Reference Committee on Reports of Officers.

Motion seconded and carried.

Dr. Arthur T. McCormack, Kentucky, moved that in the presentation of the published reports the chairmen be asked merely to emphasize the important matters presented in the several reports, rather than to read the reports as published in the Handbook. Motion seconded.

Dr. William L. Noble, Illinois, moved to amend that any additions to the present reports be read.

The amendment was seconded, accepted, and the original motion as amended was carried.

Dr. W. T. Councilman, Massachusetts, Chairman, read the Report of the Board of Trustees, which was referred to the Reference Committee on Reports of Officers.

Report of the Board of Trustees

The past year has been distinguished by no unusual events in the Association; all of the forms of activity by which it serves the medical profession and the public have been marked by successful effort. All Fellows and members of the Association may be proud of the demonstration which its yearly reports give, that the ideal of service to man is dominant in the minds of the medical profession of this country. It is perhaps natural that this ideal of service should dominate medicine for its members know more intimately than the members of other professions the sorrows of man. In pursuance of such ideals, it is natural that animosities should be excited, for the efforts of the Association oppose the interests of those who prey on humanity. The Judicial Council, the Councils on Medical Education and on Health and Public Instruction, will each present to you a detailed report of their activities.

COUNCIL ON PHARMACY AND CHEMISTRY

Of all the activities of the American Medical Association, none has aroused more antagonism than those connected with the work of the Council on Pharmacy and Chemistry. The publicity department of our pharmaceutical manufacturers and the journals which depend on advertising for their existence are ever ready to find fault with, to condemn and to misrepresent the Council. Nevertheless, it is gratifying to note that there is a gradually increasing appreciation of its aims and objects and what it is accomplishing. The medical profession is slowly but surely appreciating the value of the work and the manufacturers, also, both foreign and domestic, are recognizing that the reports of the Council are authoritative and final, and must be respected. Unfortunately most of the proprietary articles are merely simple mixtures of substances marketed under meaningless or misleading names, and advertised by means of extravagant if not false claims. As few of their products can receive recognition, these firms naturally feel it is to their interest to oppose and ignore the work of the Council. Of course, the real remedy lies in the hands of the medical profession which should refuse to accept and prescribe proprietary preparations on information supplied by those interested in their sale. Still, it is a satisfaction to note that all those firms which have products that really are new and of therapeutic value are asking the Council to pass on them.

While it is difficult to single out any particular activity of the Council as especially deserving notice, the following may be mentioned:

DIABETIC FOODS

Most of these are fraudulent or nearly so and are put out by a number of manufacturers with the view of supplying the demand of physicians for a suitable food in diabetes. An investigation of these by the Council showed that while two or three seemed to come up to the government standard and were reasonably clear as to the carbohydrates, practically none was sold under claims which could be regarded as legitimate. After considerable investigation the Council has admitted two of the preparations to N. N. R., while the product of another concern will soon be accepted. While accepting these, The Journal has published reports on some of the more fraudulent among these foods. This particular work is of vast importance; it not only protects the doctor, and through him the public, but it is stimulating other manufacturers who want to do right, to bring their products up to the standard required.

RUSSIAN MINERAL OIL

A decided interest in this as a laxative has been excited by the recommendations of Sir Arbuthnot Lane and his followers. The mineral oil used by him is called Russian Mineral Oil and slightly differs from the liquid petrolatum of the U. S. Pharmacopeia. It is probable that as a result of the investigation the Council will, in a report soon to be published, define Russian Mineral Oil and explain to the profession its relation to the liquid petrolatum of this country. It is hoped that in this way a check may be put on the introduction of this preparation as a proprietary under a host of meaningless names, with more or less fraudulent claims as therapeutic agents. It will be a reflection on our profession if such proprietaries already on the market are allowed to exist.

USEFUL DRUGS

The work of the committee on a selected list of drugs has resulted in the publication of the book called "Useful Drugs." This has already been adopted as a text-book by a number of our best schools; its adoption has been considered by the state licensing boards, one already having adopted it, and there is every indication that this enterprise will have a most beneficial effect.

Among other constructive work by the Council is that conducted through its Committee on Therapeutic Research. Under the auspices of this committee a large amount of pharmacologic research work has already been accomplished and much is under way. Eventually this work will result in bringing back into use well-known drugs—non-proprietary preparations that have been swept aside by the commercial propaganda for proprietaries.

Those who are particularly interested should get the annual publication of the Council which is sold for 50 cents a volume. It is to be regretted that more physicians do not take sufficient interest in the Council's work to obtain these and other reports of the Council.

CHEMICAL LABORATORY

Not the least of the enterprises of the Association is the work done in our chemical laboratory. An idea of what is done here can be only a slight degree obtained from the material that is published in The Journal from week to week. The unpublished work includes examinations made for the Council on Pharmacy and Chemistry, on the results of which often depends the action of the Council; also, a large amount of work is done in connection with our propaganda department, in the investigation of "patent medicines," much of which is never published. Still further, considerable chemical work is done at the request of individual physicians.

During the past year the laboratory force has been increased so that in addition to the director of the laboratory, who is also secretary of the Council, there are now employed three chemists, who devote their entire time to the work.

PROPAGANDA DEPARTMENT

The original purpose for which the Council on Pharmacy and Chemistry was created was to investigate and enlighten the profession concerning, the so-called "ethical" proprietary medicines; that is, those sold through or prescribed by physicians. It was soon found, however, that there was no dividing line between such medicines and the ordinary "patent medicines" sold direct to the public. There gradually developed a demand, on the part of the profession, and later, on the part of the public, for information regarding proprietary medicines. Our attempt to meet this has in course of time so broadened out that it has been necessary to create a new department—the Propaganda Department. This has become one of the most important phases of the Association's work and it is rapidly increasing in scope and extent.

As a type of the work which the Propaganda Department is doing, through The Journal, the following is worth referring to: Early in the year one Peter P. Duket appeared with a new "cure" for tuberculosis. He would probably have attracted little attention and have done but little harm had he not received the financial support of a prominent politician and the professional support of a Chicago medical college. These two elements gave the man and his "cure" a certain standing in the eyes of the public that otherwise they would never have received. The Propaganda Department had in its files material, in the way of correspondence and advertising matter, that Duket had issued some few years previously. Realizing that the amount of publicity Duket and his "cure" were getting was productive of wide-spread harm, the facts developed up to that time were printed in The Journal, May 10, 1913. In addition, an investigation was started of Duket's "cure" and the results were published in full in The Journal for May 24, 1913. In spite of the overwhelming evidence presented by The Journal in regard to the worthlessness of this vaunted "cure," the professional and financial backers of Duket continued to exploit it. The sequel to this story appeared in The Journal, April 25, 1914, where it was reported that both the college which had stood sponsor for it and the individual who had furnished the money had come to the conclusion that the Duket "cure" was worthless. Specific attention is called to this case for the reason that no other agency apparently was ready or willing to stand between the consumptive public that was being deceived and the organized backers of the deception.

This case is but one out of many in which the American Medical Association has spent time and effort in obtaining and disseminating evidence for the protection of the exploited sick, and in nearly every case the Association has been the only source of protection these unfortunates have had. That the public is beginning to recognize this fact is evidenced by the large number of letters we are now receiving from laymen. Five years ago a letter from a layman was such an unusual event as to cause comment; now such are received in nearly every mail. During 1913 there were received and answered over 4,200 such letters of inquiry regarding frauds in medicine, as compared with 2,450 letters received in 1912. Many, if not most of these letters, called for information about more than one product. The data sent out from this department alone, therefore, can be roughly estimated. Of these letters 2,990 were from physicians and 1,213 from laymen, and this does not include the correspondence from the laboratory or from the Council on Pharmacy and Chemistry.

One of the most encouraging features of the work done by the Propaganda Department is the interest it seems to have awakened on the part of the lay magazines and newspapers in censoring the advertisements of a medical or quasi-medical nature that appear in their pages. There is a very evident desire on the part of the better class of lay publications to exclude from their pages fraudulent medical advertisements. A number of such publications are constantly referring to the Propaganda Department for information regarding the different preparations or devices whose manufacturers seek advertising space. Not a few newspapers are submitting medical advertising copy to the Propaganda Department.

This state of affairs contrasts strangely with the attitude of the majority of the so-called independent medical journals. It is but rarely that inquiries come from these publications regarding the character of the advertisements of medicinal products they are carrying. More than once the Propaganda Department has had to advise newspapers against carrying advertisements of certain products that were at the same time being advertised in medical journals—and the advice has been taken. It is an unfortunate fact that the effect of the work against frauds in medicine is more evident in lay than in medical journals; the writer of this report has several times had his attention called to this fact by laymen who sought an explanation for this strange condition.

A national organization of advertising men has established vigilance committees in various parts of the United States to work toward the elimination of fraud in advertising. The Association's publications on frauds in medicine have been placed in the hands of these committees and the chairman of each committee is on our mailing list to receive all new pamphlets dealing with the subject. We have been liberal with these committees, supplying them with material asked for. The committees are doing most effective work, and while the results may not be evident to the average man, they are to those who are watching the progress of events. The stereopticon slides that have been prepared in the Propaganda Department, illustrating various phases of quackery and the nostrum evil, have been ordered by the National Vigilance Advertising Committee for use in lectures before advertising men's associations.

The Propaganda Department is being recognized as a clearing-house of information on the subjects with which it deals. Federal departments at Washington, state health officials, municipal health departments, editors of magazines and newspapers, and in some instances health officials in Europe, Australia, India and other countries have referred to this department for information on medical and medicinal frauds.

Nearly three thousand copies of the second edition of "Nostrums and Quackery" have been distributed during the past year. The fourth edition of "The Great American Fraud" was exhausted early in 1913, and a fifth enlarged edition has been issued. This contains an addition to Mr. Adams' original series, extending from 1905 to 1907, and two of his later articles that appeared in *Colliers* in 1912. More than 1,100 paper bound and 250 cloth bound copies have been sent out during the year. Additional pamphlets on frauds in medicine have been issued during the year, putting into this form matter which later will appear in the next edition of "Nostrums and Quackery." The number of individual pamphlets has increased to a point where it seemed wise to combine them in groups, and such combined pamphlets are now to be had on such subjects as: "Consumption Cure Fakes," "Cancer Fakes," "Deafness Cure Fakes," "Obesity Cure Frauds," and "Female Weakness Cures." During the past year more than 46,000 pamphlets dealing with frauds in medicine have been sold or distributed gratuitously among the laity.

The enormous influence of this work of the Association on both the medical profession and the public is difficult to realize. The great advance in medicine in the past thirty years is that it is becoming scientific. The physician seeks knowledge of the conditions of disease in the individual by all possible methods which may assist in the quest and remedial methods are based on the knowledge so obtained. Necessarily, the investigation of disease led to the study of the social factors which are often dominant, and with this there has been developed that spirit of service and altruism which characterizes to-day the profession of medicine. Never before has medicine so completely possessed the confidence of the public. The Fellows and members of the American Medical Association may feel a just pride in what the Association is doing in upholding and assisting in the upbuilding of the highest ideals of the profession through the work of its various councils.

The work of the Propaganda Department has been very greatly assisted by the interesting character of the literature it has published. The story of vice will always have an interest as well for the virtuous as for the vicious; the virtuous find in it the satisfaction which comes from the exposure of vice in others, the vicious in that they may follow or avoid methods according to the degree of success or failure which attends them. The philosopher also reads with interest for the story tells him much of the ignorance and credulity of man.

PUBLICATIONS

The details concerning the circulation of The Journal will be found in the addenda to this report. As will be noticed, the average weekly circulation for 1913 was over sixty thousand copies, and there was an actual increase in the regular mailing list of 3,333 over the previous year. During the year 14,087 names were placed on the list and 10,754 taken off. Those dropped include physicians who have died, others who were ineligible to fellowship, voluntary discontinuances and those dropped for non-payment. The increase in the mailing list comes from the extended efforts made during the year to increase the circulation.

While in rough numbers the circulation is 60,000, if we take into consideration the fact that a single copy of The Journal is often read by two or three physicians, we believe we are making a conservative statement in saying that at least 90 per cent. of the members of our profession who are capable of appreciating The Journal have access to it.

During the year 1913, 4,298 names were transferred from the subscription to the fellowship list. This large number of transfers was the result of inviting to become fellows those subscribers who were eligible to fellowship. A very large number of those who are now fellows originally took The Journal as subscribers, and such transfers are continually being made.

It should be understood that the increase in the circulation of The Journal is not from the voluntary act of individuals. It was accomplished in three ways: through circular letters and sample copies of The Journal; through agents working on commission, and through agents acting as organizers and working on basis of salary, expenses and commission.

A large proportion of the medical profession of this country are on our mailing list at the present time, and a much further increase in circulation cannot be expected; in fact, it will take persistent effort to keep it up to the present mark.

ARCHIVES OF INTERNAL MEDICINE

A comparison of the circulation statement of the last two years shows a loss of fifty-two in 1913. The total number of copies printed last year was 30,272—a little less than in 1912. The financial loss for the year was $45.68.

There is every reason to believe that the circulation will continue as at present. The slight loss in one year will be counterbalanced by a corresponding gain in another.

AMERICAN JOURNAL OF DISEASES OF CHILDREN

The circulation of the Children's Journal in 1913 was 2,066—a gain of 188 over the year 1912. The total number of copies printed in 1913 was 27,747; and there was a net loss of $169.32.

The statement made in regard to *The Archives of Internal Medicine*, however, also applies to this publication.

THE DIRECTORY

The American Medical Directory, just off the press, merits a passing notice. It is the Fourth Edition, and as each preceding one has been improved over its predecessor, so also has this edition been improved. One of the new features is an attempt to indicate the specialty, if any, practiced by each individual. The previous edition contained a list, arranged by states and cities, of the members of the various national and special societies. This has been retained, but a symbol now follows the name of the individual to indicate to what societies he belongs. In addition, the specialty is indicated of all those who, while not members of special societies, have designated their desire to be classed as specializing in such and such lines. This, it is believed, will be of value when one desires to learn the standing of a physician.

By the aid of symbols and abbreviations, a large amount of information is included in small space. For instance, the following is a statement concerning one individual as it appears in the Directory, except that "John Doe" has been substituted for the name of the doctor:

> **DOE, JOHN M.** (b'69)⊕—Pa.1,'91; (l'91); 931 Chase Ave.; Assoc. Clin. Prof. Opth. Pa.7; (B4, 22); Op *

If this information were written out in full, it would appear like this:

> **DOE, JOHN M.** Member of his County Medical Society and State Medical Association, Fellow of the American Medical Association, born in 1869, graduate of the University of Pennsylvania, department of medicine in 1891, licensed in Pennsylvania in 1891, residence and office 931 Chase Ave., Associate Clinical Professor of Ophthalmology in the Woman's Medical College of Pennsylvania, Member of the American Ophthalmological Society and the Section on Ophthalmology of the College of Physicians and Surgeons, Philadelphia. Practice limited to Ophthalmology.

"John Doe," it should be emphasized, is not a subscriber to the Directory, nor has he paid to have this information concerning him recorded. This illustrates one of the rules governing the publication of the Directory: It is absolutely non-commercial in every respect, and all individuals are treated alike, whether or not they subscribe for the Directory.

Another point that should again be emphasized is that the information, especially that regarding graduation and licensure, is official and therefore reliable. This is true even of those who are practicing under a degree obtained abroad. Through the state department at Washington and the Consular Service a list of graduates from most of the foreign medical schools has been obtained. However, when an individual claims to have graduated from a foreign school whose list of graduates we have not secured, his statements are verified through the Consular Service.

The approximate cost of the present edition of the Directory is $58,000 to $60,000, and the receipts are estimated at from $54,000 to $56,000; that is, there may be a loss of from between $4,000 and $6,000. However, since all the fundamental facts, the gathering of which has involved great expense, are now obtained, much of this expenditure will in the future be eliminated, so that we may hope soon to be able to issue the Directory without any loss.

We feel confident that those who have received the book and have looked into it must regard it as a credit to the Association, not only from the character of its contents and the information therein given, but also from the mechanical viewpoint. All the work on the Directory, except the binding, has been done in the Association's own building. For the purpose of reducing the bulk, special thin, opaque paper was imported from Belgium.

COOPERATIVE MEDICAL ADVERTISING BUREAU

Concurring in the action of the President, who, in compliance with the direction of the House of Delegates, appointed George H. Simmons, E. J. Goodwin and Will C. Braun a committee on the Bureau of State Medical Journals, the Board of Trustees followed up a plan it had devised prior to the action taken by the House of Delegates establishing this committee and empowering this same committee to act as the agent of the Board.

The Board now reports: The Cooperative Medical Advertising Bureau has been in operation since December 1, 1913. The Board underwrote this enterprise by appropriating the sum of $5,000, or so much thereof as might be necessary for the establishment of this Bureau. Twenty-two state journals are represented by the Bureau. Orders for advertising in these journals to the extent of $9,000 have been secured through the Bureau; and apparently the work is appreciated by the state journals. Business is handled by this Bureau on a commission basis, and it is expected that eventually the Bureau will be self-supporting.

FINANCIAL

A reference to the Auditors' report, which follows as an addendum, will show that the profits for the year 1913 were very near to the vanishing point, viz., $1,191.73. As a matter of fact, the report shows that the present worth on December 31, 1913 was $540,261.58, while on December 31, 1912 it was $541,492.41; so that the present worth on January 1 this year was $1,230.83 less than on January 1 last year. This reduction in actual profits comes from two causes:

First, an increase in General Association Expenses (See Exhibit B). Running back five years these expenses were as follows:

1909	$38,302.
1910	40,350
1911	44,841
1912	59,188
1913	79,479

Showing practically a doubling of the General Association Expenses during the last five years, and an increase last year over the preceding one of over $20,000. It should be explained that under the head "General Association Expenses" are included all expenses incurred in conducting the various activities of the Association, aside from the publication of The Journal. For instance, Association expenses (under which come expenses connected with the annual meeting, those connected with the Secretary's office—including salaries, printing, postage, supplies, etc.—section reporting, Trustees' meetings, scientific research, Judicial Council, Section Secretaries' meeting, etc.—see Auditors' report Exhibit B) were $18,084; Council on Health and Public Instruction, $18,465; Council on Pharmacy and Chemistry and the Chemical Laboratory, $13,321; Council on Medical Education, $8,617; Propaganda, $10,509; Therapeutic Research, $1,278; Organization, $9,202. Under the last head, "Organization," are included salaries and expenses paid to organizers in the field, which amount to $8,262.

Second, there was an abnormal decrease in the receipts from fellowship subscriptions, which may be thus explained:

LIABILITIES

Accounts Payable		$ 14,758.05
Advance Payments on Publications		2,427.38
Surplus:		
As at Dec. 31, 1912	$541,492.41	
Less: Directory—Third Edition (1912). Balance written off	2,422.56	
	$539,069.85	
Net Income for the year ended Dec. 31, 1913	1,191.73	
Total Surplus		$540,261.58
Total		$557,447.01

EXHIBIT "B"

INCOME AND PROFIT AND LOSS ACCOUNT FOR THE YEAR ENDED DEC. 31, 1913

Journal American Medical Association:

Revenue:		
Membership Dues		$ 40,461.87
Subscriptions		223,832.57
Advertising		188,986.82
Jobbing		3,762.18
Books		3,862.94
Reprints		2,861.91
Buttons		511.14
Miscellaneous Sales		4,000.97
Interest		658.00
Total Revenue		$468,938.40
Expenses:		
Per Schedule "2"	$382,753.71	
Provision for Depreciation—Schedule "3"	14,313.02	
Loss on Bad Debts	1,463.17	
Total Expenses		$398,529.90
Net Revenue		$ 70,408.50

General Association Expense:

Expenses:			
Association		$ 18,084.26	
Health and Public Instruction		18,465.14	
Pharmacy and Chemistry and Chemical Laboratory		13,321.79	
Medical Education		8,617.54	
Propaganda		10,509.47	
Organization		9,202.68	
Therapeutic Research		1,278.17	
		$ 79,479.05	
Less:			
Interest on Bonds	$2,434.37		
Interest on Treasurer's Account	3,063.91		
Rentals	4,764.00		
		10,262.28	
Net Association Expenses			$ 69,216.77
Net Income			$ 1,191.73

SCHEDULE "1"

BONDS OWNED AS AT DEC. 31, 1913

No. of Bonds	Description	Value Par	Value Book
5	Atchison, Topeka & Santa Fe Railway Co. 100 year 4 per cent. Gold Bonds	$ 5,000.00	$ 4,988.75
5	Atchison, Topeka and Santa Fe Railway Co., 100 year 4 per cent. Gold Bonds	5,000.00	4,532.50
5	Baltimore and Ohio Railway Co., First Mortgage 4 per cent Bonds	5,000.00	5,032.50
5	Baltimore and Ohio Railway Co., First Mortgage 4 per cent. Bonds	5,000.00	4,767.50
5	Erie Railroad Co., 100 year 4 per cent. Gold Bonds	5,000.00	4,932.50
5	Reading Company, General Mortgage 4 per cent. Bonds	5,000.00	4,870.00
5	Reading Company, General Mortgage 4 per cent. Bonds	5,000.00	4,732.50
5	Union Pacific Railroad Co., First Mortgage 4 per cent. Bonds	5,000.00	5,207.50
25	City of Omaha Water Works, 4½ per cent. Gold Bonds	25,000.00	24,750.00
	Total	$65,000.00	$63,813.75

SCHEDULE "2"

JOURNAL EXPENSES FOR THE YEAR ENDED DEC. 31, 1913

Wages and Salaries	$142,628.08
Editorials, News and Reporting	11,100.11
Paper	111,244.02
Ink	3,490.27
Electrotypes	5,374.64
Binding	142.09
Miscellaneous Paper	4,304.27
Postage—First Class	15,539.61
Postage—Second Class	26,167.27
JOURNAL Commissions	9,899.94
Collection Commissions	4,213.01
Discounts	3,216.09
Express and Cartage	2,366.32
Exchange	1,471.12
Office Supplies	490.82
Telephone and Telegraph	750.01
Office Jobbing	3,579.32
Miscellaneous	7,068.64
Power	$ 2,651.97
Light	949.95
Fuel	2,522.39
Factory Supplies	4,226.68
Insurance and Taxes	4,567.58
Legal	8,703.32
Repairs and Renewals—Machinery	3,509.69
Repairs and Renewals—Buildings	2,361.50
Archives	45.68
Children's Journal	169.32
Total	$382,753.71

SCHEDULE "3"

PROVISION FOR DEPRECIATION FOR THE YEAR ENDED DEC. 31, 1913

Classification	*Rate*	*Amount*
Building "A"—Old	5 per cent.	$ 904.78
Building "B"—New	2.5 per cent.	3,670.91
Machinery	10 per cent.	5,940.32
Furniture and Fixtures	10 per cent.	1,224.57
Type	15 per cent.	839.33
Metal	20 per cent.	1,205.48
Factory Fixtures	10 per cent.	407.37
Laboratory Equipment	10 per cent.	120.26
Total		$14,313.02

We found all books and records in good order and well and accurately kept, and, in conclusion, desire to express our appreciation of the courtesies extended to us during our examination of the accounts. Yours truly,

MARWICK, MITCHELL, PEAT & Co.,
Chartered Accountants.

Dr. Alexander Lambert, New York, Chairman, presented the report of the Judicial Council, which was referred to the Reference Committee on Reports of Officers.

Report of the Judicial Council

To the Members of the House of Delegates of the American Medical Association:

At the meeting of the House of Delegates in Minneapolis, at the suggestion of the Board of Trustees, the House referred to the Judicial Council for investigation the appeal for funds from the Home for Widows and Orphans of Physicians in Baltimore. The Judicial Council has very thoroughly considered this matter, one of its members taking a special trip to Baltimore to investigate fully the subject.

This institution is doing a generous and splendid work caring for physicians and members of physicians' families who are left penniless and destitute. The Home is a most deserving endeavor to help the unfortunates of the medical profession, but the question presented to the Judicial Council is one of broader policy than that of individual benevolence. The funds of the American Medical Association are now devoted to raising the standards of medical education; to educating and enlightening the public on matters of public hygiene and public health; to disseminating weekly to the profession the active changes in the development of medical knowledge, as evidenced by THE JOURNAL; to the endeavor to protect the profession and the public from medical frauds, and to keep the standards of drugs and other therapeutic agencies above reproach. This at present is the work of the American Medical Association — using its funds for developing the growth and usefulness of the profession. The question now arises: Must the Association also take on and bear the burden of the weak and the unfortunate who have been in the profession or who have been left by former members of the profession? Such benevolence would entail a large outlay of money It would cost $500 in original expense for each inmate annually for support and care. The institution would have to receive from all the forty-eight states any worthy individual who would apply, and to carry on this benevolence properly would require not only all the surplus of the American Medical Association but in a short time would use the entire funds of the Association

The Judicial Council feels that this philanthropy should not be undertaken by the American Medical Association. As has been pointed out the aims of the American Medical Association are for the development of the education and active work of the profession and the burdens of benevolence should be left to the local constituent state associations or better to the local branches thereof. The constituent state associations and their component county societies are better able to perform this work because they look on their needy fellow members with more personal interest than a large, impersonal, national organization can ever do.

The Judicial Council therefore recommends to the House of Delegates that charity and benevolence toward the unfortunate members of the Association be left to the local organizations. It recommends specifically that the request for support and maintenance by the Home for Widows and Orphans of Physicians in Baltimore be not granted.

AMENDMENT TO BY-LAW RELATING TO THE JUDICIAL COUNCIL

The Judicial Council recommends that Section 4, Chapter VII of the By-Laws be amended so that this section shall read as follows:

Section 4. Judicial Council.—The Judicial Council shall consist of five Fellows who shall be nominated by the President and elected by the House of Delegates. At the annual session in 1911, one member of the Council shall be elected to serve for five years, one for four years, one for three years, one for two years and one for one year, and thereafter one member of the Council shall be elected each year to serve for five years. It shall select a chairman from its membership. The Secretary of the Association shall be, *ex-officio*, Secretary of the Council. It shall expend money and contract debts only on the authority of the Board of Trustees. It shall keep a permanent record of its action at its office which shall be at the headquarters of the Association. It shall make an annual report of its decisions and the results of its investigations to the House of Delegates.

"The judicial power of the Association shall be vested in the Judicial Council whose decisions shall be final. This power shall extend to and include (1) all controversies arising under this constitution and by-laws to which the American Medical Association is a party; and (2) controversies (a) between two or more recognized constituent associations, (b) between a constituent association and a member or members of another constituent association or other constituent associations; (c) between members of different constituent associations. In all these cases the Judicial Council shall have original jurisdiction.

"The constituent associations herein referred to are those defined in Article 4 of the Constitution, and the component societies are the county or district medical societies which unite to support and maintain the several constituent state associations.

"In all cases which arise between a constituent state association and one of its component county societies; between component county societies of the same constituent state association; between a member of a constituent state association and the component society to which said member belongs; or between members of different component societies of the same constituent state association, the Judicial Council of the American Medical Association shall have appellate jurisdiction.

"The Judicial Council may, at its discretion, investigate general professional conditions and all matters pertaining to the relations of physicians to one another and to the public, and shall make such recommendations to the House of Delegates and the constituent associations as it deems necessary."

THE JUDICIAL COUNCIL AN EFFICIENT AGENCY

These changes recommended by the Judicial Council define more clearly and more fully the proper functions of the Judicial Council. If it is the desire of the House of Delegates to make the Judicial Council amount in reality to a competent and dignified court which shall adjudicate controversies between individuals, component societies or constituent associations and the American Medical Association; or the constituent associations themselves, or between these constituent associations and the individuals composing them, or between individuals themselves, there must be some definitely stated conditions under which the Judicial Council shall have primary jurisdiction, or an authorized appeal may be made to the Judicial Council. At present the Judicial Council has only original jurisdiction in cases in which the American Medical Association or one of its constituent associations is a party. There is no appellate function which it can exercise. Any case which has come to the Council in which a Fellow of the Association has demanded protection from what he considered an unjust decision of his state association, the Judicial Council has been forced to ask, as a favor, the reconsideration of the case in which an appeal would naturally have come to the Council if it had had appellate powers.

This is not an endeavor on the part of the Judicial Council to gain more power, although the Council realizes that such accusation may be made against it. In considering this appellate function, we must consider, at any rate, the necessity of the control of its own Fellowship by the American Medical Association. To-day the American Medical Association has no control over its own membership or Fellowship beyond the fact that if a member be proven guilty of secret fee-splitting, he drops mechanically, without further action, from membership in the American Medical Association. The American Medical Association is, by its present By-Laws, forced to enroll any member of any component society who makes application for Fellowship on the prescribed form and pays his annual Fellowship dues for the current year together with any indebtedness to the Association outstanding against the applicant. No matter what crimes against society, what flagrant, disgraceful breach of ethics or decency such an one may commit, the American Medical Association to-day cannot deny him Fellowship, nor has the Association power to remove from its Fellowship a member who disgraces its name or brings its Fellowship into disrepute. The American Medical Association has no power whatever to control the injuries that may be done the individual Fellow through jealousy or mistaken persecution that may arise at any point. There is no appeal open to any Fellow in the American Medical Association by which he may protect his Fellowship in the Association if he deems himself unjustly condemned by a component or by a constituent organization and deprived of membership and consequently of his Fellowship. This is not right; it is not reasonable; and such conditions should not be permitted to exist. For this reason the Judicial Council asks of the House of Delegates appellate jurisdiction in the cases mentioned above.

PRINCIPLES OF MEDICAL ETHICS

The Council also recommends that to Section 4, Chapter VIII of the By-Laws, there be added:

"Fellowship shall be further conditioned on a Fellow conducting himself in accordance with this constitution and by-laws and Principles of Medical Ethics of this Association."

In the opinion of the Judicial Council the time is ripe for the House of Delegates to proclaim that Fellowship at least in the American Medical Association is a right that must be protected. The section here recommended is not an endeavor to make the Principles of Ethics a code of rules and punishments. It is simply a demand that the rules of decency and honorable action shall be observed by the Fellows. The Principles of Ethics of the American Medical Association are only those broad rules of conduct which are naturally and spontaneously followed by honorable physicians in their dealings with their fellow men. It may be said of these rules, as of all duties, it is no credit to perform them; it is personally discreditable to leave them unperformed. They are analogous to the standards of the Army and the Navy which require that a man shall conduct himself as an officer and a gentleman.

AFFILIATE FELLOWSHIP FOR AGED FELLOWS

The Judicial Council further recommends that in Section 7, Chapter VIII, there be added the clause:

"Affiliate Fellowship.—A Fellow who has been a Fellow for a continuous term of fifteen (15) years, who is not less than sixty-five (65) years of age, and who is an honorary member of his county society and of his state association, or is connected with these organizations in an equivalent manner whereby he is relieved from the payment of dues or fees; on request of the Council of his state association may be made an Affiliate Fellow by a majority vote of the House of Delegates. Affiliate Fellows shall be privileged to participate in the scientific assemblies of the Association; they shall not be required to pay Fellowship dues and shall not receive THE JOURNAL of the American Medical Association except by personal subscription. Affiliate Fellowship shall be conditioned on the continuance of the relationship with his state association herein defined."

FELLOWSHIP DUES

The Judicial Council recommends that, wherever in the By-Laws the term "annual dues" appears, the words "annual Fellowship dues" shall be substituted. The use of the word "Fellowship" in defining the dues of those now known as Fellows will help correct a mistaken opinion which has long prevailed concerning the actual membership of the Association — the organization as a whole.

COORDINATING THE BRANCHES OF THE ORGANIZATION

The Judicial Council believes that the several functions of the different branches of the organization of the American Medical Association should be carefully preserved. It believes that this should be carefully carried out in the work of the councils of the American Medical Association and in the work of the committees. There is no question that if a national committee or a national council shall deal directly with county societies, ignoring or going over the heads of the component state associations, that such action will soon become a disintegrating force and will disturb and antagonize the relationship between the component state associations and the national body. In all matters in which the action of the county society is necessary, these same societies should report directly to the constituent state associations, and these state organizations in turn should report to the American Medical Association. This should be true whether it be for the action of councils or of committees, or for the national body itself. The Judicial Council, therefore, desires to draw attention to Section 8, Chapter VII, of the By-Laws relating to the Committee on Red Cross Medical Work, and it desires to recommend that the words "and county" be stricken out from this section so that it shall read, "This Committee is authorized to cooperate with the National Red Cross and shall have advisory supervision over state committees having charge of the same subject, etc."

INVITED GUESTS DEFINED

It is further recommended by the Judicial Council that Section 10, Chapter VIII, of the By-Laws concerning invited guests be amended to read as follows:

"Scientists resident in the United States who are not engaged in the practice of medicine and eminent physicians and scientists from foreign countries, may be invited by the general officers, or by the officers of a section, to attend an annual session and take part in the scientific work. They shall be designated as invited guests, and shall be entitled to participate in the scientific and social functions."

ADVERTISING IN THE PUBLIC PRESS

In pursuance of its duty to investigate general professional conditions and all matters pertaining to the relations of physicians to one another and to the public, the Judicial Council calls the attention of the House of Delegates to the subject of advertising in the public press by physicians. The Judicial Council finds that the profession is restive under the flagrant misuse of the public press by certain members of the profession and certain prominent and non-prominent Fellows of the American Medical Association itself.

The Principles of Ethics of the American Medical Association define clearly the methods which are objectionable for physicians to use to bring themselves into the public notice in their endeavor to gain a livelihood. They state clearly the methods by which a man may rise by honorable endeavor to the fame of a well-earned reputation, and suggest the different methods by which a man may gain an unsavory notoriety. The standards of the medical profession have always demanded that physicians shall not exploit their ability or achievements to the laity. The medical profession condemns such advertising as quackery. The refraining from or the employment of advertising is the clearly defined difference between a reputable physician and a quack — the physician, one who quietly, through his professional work and attainments, seeks by daily honorable dealing to spread the truth among his patients; the quack, one who endeavors to obtain his livelihood by playing on the credulity of the ignorant and the timid, imposing on the public statements known to be false, stopping at nothing in his effort to enhance his notoriety or fill his pocket.

POPULAR WRITEUPS OF SCIENTIFIC SUBJECTS

Of late years the American Medical Association, through its Council on Health and Public Instruction has endeavored to spread broadcast knowledge of preventive medicine and public hygiene. It has endeavored to educate the public to an appreciation of what the physicians and surgeons are doing and what are their aims and ideals in medicine. This has aroused a widespread interest in the public mind, and the public press has eagerly seized on this propaganda as news which interests its readers and which is, therefore, something to be sought and published. This has been legitimate work of public benefit and for the public good, and no one questions that it should be highly commended. It has, however, produced the following situation: The public is eager to hear and learn all it can of the most recent advances in the cure of diseases that so far have baffled the efforts of men to cure, such as cancer and tuberculosis; it is eager to hear of the brilliant operations by which men have seemingly been saved from certain destruction and brought back to useful existence. It is anxious to learn and put in practice the best methods of public hygiene and of preventive medicine. The daily press has correctly considered such subjects as news, as that is what interests its daily readers, but the medical profession has been placed at a disadvantage. The members of the profession who value the kind of reputation which they may bear before the public and from whom the most accurate information could be obtained, have been forced to see the most garbled statements published as medical facts, or have been refused opportunities to have the truth published unless they were willing to put themselves in the false position of self-exploitation. Certain other members of the profession, however, with a very wide-awake commercial spirit, have quickly seen the means by which they may appear in the press as doing extraordinary things above their fellows, as being the ones to whom all men refer when new discoveries are to be discussed and considered, and have eagerly seized on the opportunity, which the situation has offered, to have their pictures, their honors and their doings put in the public press. They invited reporters to be present at their clinics that these surely may be reported, and have used various other methods that have appealed to their spirit of commercialism that they might increase their passing notoriety and their incomes. While this may not be quackery; it must be acknowledged to be advertising. It is frequently difficult to decide where one ends and the other begins. Certain newspapers have heralded this stepping over the limits of the former strict adherence of the profession to its non-advertising principles as something laudatory and much to be desired. They seemingly fail to understand and to appreciate that if the barriers which the medical profession has held up, and still holds up, are broken down, quackery will become more and more rampant, and although the ease with which the press will obtain the sensations it desires will increase, the accuracy and the truth and the value of the news which they so eagerly seek will soon be ruined.

The lay press has often done injustice and unconscious injury to the physicians it was endeavoring to aid. In the smaller communities a physician or surgeon may do some act, perform some operation or bring about the cure of some patient in whom the editor of a local paper is greatly interested. This editor appreciates the value of keeping a person's name before the public, and hoping to give the physician help and assistance in establishing his reputation begins to mention the doctor's daily comings and goings or operations. Before long the doctor is suspected of deliberately trying to advertise himself by means of newspaper writeups and his reputation as an upright physician suffers, while he himself may be blameless in the whole matter. In the larger communities, among the men holding appointments on the staffs of hospitals, it is not unusual, when some well-known individual is being treated at such an hospital, for the press eagerly to seek for knowledge of his condition, and many a reputable physician has squirmed to see his name and his work flaunted before the public, to his detriment as he well knows, and for which injury there is no possible redress. This situation is not localized in any one place. It is universal.

PUBLICITY COMMITTEES RECOMMENDED

To all questions there are two sides, and we must realize that if the American Medical Association endeavors to arouse in the public an interest in medical matters and increase their knowledge of public health and hygiene, with this increased knowledge will come a demand for more knowledge concerning the various diseases which may be acquired by any individual. The daily press has a right to publish that which is of interest to its readers; hence it has a right to a knowledge of medical matters that shall be accurate and given by honorable men. On the other hand, there is every reason why the medical profession shall keep up its barriers against the self-advertising of individuals for selfish purposes, and no adequate reason why these barriers should be let down.

The Judicial Council, appreciating this situation, recommends the following plan, which has already been tried and which has met the conditions presenting in a manner satisfactory to all concerned — the public, the press and the medical profession.

A few years ago the conditions which are referred to above were very acute and very flagrant in Kings County, New York, and the county society undertook the solution of the problem. At its April meeting, in 1913, this society appointed a publicity committee consisting of three members, which sought to coöperate with the editors of the public press in order to devise a plan by which articles and interviews on medical topics by members of the society, published in the daily papers, should be truthfully and correctly reported. It was decided that this committee should undertake:

1. To prevent the publication in the daily press of misleading and erroneous statements on medical topics.
2. To prevent the publication of cures and surgical operations so exaggerated and false that mental anguish, physical suffering and expense would be imposed upon the sick and afflicted.
3. To prevent the reporting of ordinary medical cases and surgical operations of no interest to the medical profession which are misunderstood by the public and serve but to exploit the narrator.
4. To act as an advisory committee, if so desired, to members of the Society who contemplate publishing medical articles in the newspapers and who desire to conform to the Principles of Ethics.
5. To further the publication of scientific articles on medical subjects relative to the public health.
6. To seek the cooperation of the editors of the public press to accomplish these purposes.

The Committee added that it desired it to be understood that it did not discourage publicity, but on the contrary advocated the greatest publicity possible on the liberal ethical lines of the American Medical Association, which encourages members of the medical profession to give as wide publicity as possible to all matters pertaining to hygiene, sanitation and public health, but discourages all direct or indirect self-advertising. That the Committee recognized the futility of any attempt on its part to dictate to the press what it should or what it should not *publish. It was thought by the Committee that the adoption of these* suggestions would relieve members of the Society of any fear of criticism and aid representatives of the press in securing interviews without difficulty. The Committee wished it thoroughly understood that it would in no sense act as a complainant body against offenders, but would willingly extend its advice to those who sought its aid.

As is apparent this committee acts as a means by which, without mentioning any names and without the exploitation of any individual, the daily press can obtain accurate knowledge of all matters in medicine it desires to publish. The public can obtain through the daily press accurate information on medical matters that are of interest to it, and the names of the individuals giving the opinion remain unpublished. It is worthy of note that the Publicity Committee of Kings County in its last annual meeting, after a year of trial of this method, reported that since the appointment of the committee the daily press in Brooklyn had been singularly free from self-exploitative articles by physicians and that the newspapers, to an encouraging extent, had availed themselves of the advice that the committee was able to give them, and, further, that the committee had been able to be of use to various members of the Kings County Society in its advice regarding the wisdom of publishing or not publishing certain articles.

Members of the Judicial Council have consulted with representatives of several of the large daily newspapers in the country, and in discussing the above plan they have met with every encouragement to believe that this plan could be followed and would be fair and just to the public, the press and the profession. The Judicial Council therefore recommends to the House of Delegates the following resolution:

Resolved, That it is the sense of the House of Delegates of the American Medical Association that each county society should constitute a publicity committee whose duties shall be to give to the daily press accurate information on all medical matters of interest to the public, that this shall be freely given without the mentioning of names or from whence the information comes, and that this committee shall further act in an advisory capacity to all physicians of its society in questions relating to publications other than in the medical press. Be it further

Resolved, That the Secretary of the American Medical Association be instructed to forward this resolution, with the reasons calling it forth, to the Secretary of each constituent state association, with the request that it be transmitted to each component society of that constituent association.

Respectfully submitted,
Alexander Lambert, Chairman.
A. B. Cooke,
James E. Moore,
Hubert Work,
George W. Guthrie,
Alexander R. Craig, Secretary.

The report of the Council on Health and Public Instruction was called for and temporarily passed in the absence of the Chairman, Dr. Henry B. Favill.

Dr. Arthur Dean Bevan, Illinois, Chairman, presented the report of the Council on Medical Education, which was referred to the Reference Committee on Medical Education.

Report of the Council on Medical Education[1]

To the Members of the House of Delegates of the American Medical Association:

The Council on Medical Education has now been in existence for a decade and hereby submits its tenth consecutive annual report.

PROGRESS IN TEN YEARS

In 1904 when this Council was established conditions in medical education were extremely unsatisfactory. During the previous fifty-eight years since the organization of the American Medical Association, a large number of medical colleges organized for profit and adhering to no reasonable educational standards had continued to thrive. In spite of investigations and extensive reports by temporary committees made up of some of the best men in the medical profession, conditions continued to grow worse and the number of colleges to increase until in 1904 when the Council was created, the maximum of 160 colleges had been reached. The results that have followed the reorganization of the American Medical Association and the persistent steady efforts of this permanent Council have more than surpassed the highest hopes of those who urged its organization. Instead of 160 medical colleges, there are now about 100. Instead of only four medical colleges holding to fairly high entrance standards, now there are eighty-two colleges which, after Oct. 1, 1914, will require for admission one or more years of collegiate work in addition to a standard four-year high-school education. In a number of cities instead of there being from two to seven weak medical colleges there is now, through mergers, but one college in each instance[2] which is invariably a stronger, better equipped institution. Instead of only a few medical colleges being provided with full-time expert laboratory teachers now at least eighty have ten or more such teachers. To offset the greatly increased cost of maintaining a medical school, the last ten years has seen large sums of money spent in endowments as well as in new buildings, new laboratories, and better equipment. Where ten years ago only a few medical colleges possessed adequate clinical facilities now there are many which have control of at least fairly adequate clinical material. Above all, however, instead of only a few medical colleges in 1904 which were training their students in an atmosphere pervaded by the hopefulness of medical research, now at least some effective research is being carried on in a large number of colleges.

The progress of the decade has not been limited, however, to medical colleges. In state medical practice acts and in the state board rulings regulating the practice of medicine

TABLE 1.—STATE REQUIREMENTS OF HIGHER PRELIMINARY EDUCATION

There are now eighteen states which have adopted requirements of *preliminary education in addition to a standard four-year high-school* education. These states, the number of college years required and the time the higher requirement becomes effective are as follows:

State Examining Board of—	Number of Years Required	Affects Students Matriculating	Affects All Applicants
Minnesota	2	1908-09	1912
North Dakota	2	1908-09	1912
Colorado	2	1910-11	1914
Connecticut	1	1910-11	1914
Kansas	1	1910-11	1914
Indiana	2	1910-11	1914
Utah	1	1910-11	1914
Iowa	2	1911-12	1915
South Dakota	2	1911-12	1915
Vermont	1	1912-13	1916
Kentucky	2	1914-15	1918
Michigan	1	1914-15	1918
New Hampshire	1	1914-15	1918
Pennsylvania	1	1914-15	1918
Rhode Island	1	1914-15	1918
Virginia	1	1914-15	1918
Arkansas	1	1915-16	1919
California	1	1915-16	1919

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[1] This report, and the reports of some of the subcommittees of the Council, have been greatly abbreviated for publication in The Journal. The complete report will be sent on receipt of a stamped, directed envelope.

[2] This does not mean that all the possibilities of medical college mergers have been exhausted. On the contrary medical education could still be greatly improved by mergers in New York, Chicago, Philadelphia, Boston, St. Louis, Baltimore and elsewhere.

there have also been marked improvement. In 1904, the laws of only 20 states made provision for preliminary education and in most of these the requirement was low or of little effect. Now 45 states have definite standards and of these 37 require a standard four-year high school or higher education. In 1904 not a single state had adopted more than a high school education for the minimum requirement; now 18 state boards have adopted at least one year of collegiate work as the minimum preliminary requirement and of these 7 have adopted the requirement of 2 years of college work. In 1904 there were 13 states which did not require that candidates for license to practice should be graduates of a medical college. Now all but 4 require graduation and of ese only one state, Tennessee, registers any number of n-graduates. [Meanwhile in Tennessee during the last four years 515 or nearly half of all those licensed were non-graduates.]

NON-RECOGNITION OF MEDICAL COLLEGES

In 1904, only two or three states were in any way refusing to recognize low-grade medical colleges. Now, at least thirty-two state boards are refusing to recognize diplomas issued by low-grade medical colleges. This action by State Licensing Boards is the legal power which is forcing the inferior colleges to make the needed improvements or to close their doors. Of the 107 medical colleges which were in session during the year there are 21 which are not recognized in from 24 to 32 states. Because of the requirement of two years of collegiate work as the minimum standard of preliminary education in seven states, graduates of only 32 colleges may invariably count on being eligible to register in these seven states. In six of these states graduates of 65 colleges are eligible for registration if the student had completed two or more years of work in an approved liberal arts' college prior to entering the medical school. The chart accompanying this report was published in the recent State Board Number of The Journal in order that prospective medical students might be in a position to avoid entering a medical college whose degrees are not recognized in a considerable number of states. Of course this knowledge is not published in the announcements of the medical colleges. Meanwhile, unless the remaining 18 states secure the practice acts giving licensing boards power to refuse recognition to low-grade colleges, and unless the licensing boards make use of such powers conferred on them, they will become the dumping ground for the product of these lower standard colleges.

SINGLE BOARDS OF EXAMINERS

Since 1904, New York, Texas, Pennsylvania and Georgia have secured new medical practice acts providing for a single board of medical examiners in place of (formerly) three separate and distinct sectarian boards. In these states therefore, the divided and ineffective legal power has been replaced by a single, undivided and efficient legal control of medical education and licensure. There are four states, Connecticut, Delaware, District of Columbia and New Hampshire, each of which has three separate boards but has a single control making the power equal to that of a single board. In only four states, therefore, is the legal control of medical licensure still divided between two or three boards, these states being Arkansas, Florida, Louisiana and Maryland. Last year all the graduates of the Eclectic Medical University, a low-grade medical college located in Kansas City, Mo., an institution not recognized in its own state, were examined and licensed by the Arkansas Eclectic Board of Medical Examiners. This particular college is reported to be not recognized in Missouri or by 29 other state licensing boards.

PRESENT EDUCATIONAL STANDARDS

Two years ago, the Council on Medical Education, was instructed by the House of Delegates to omit from Class A after Jan. 1, 1914 any medical college which did not require of every student for admission at least one year of collegiate work in addition to a standard four-year high school education, the additional year to include college courses in physics, chemistry, biology, and a modern language.[2] This standard has since been made the minimum requirement for membership in the Association of American Medical Colleges and a joint committee made up of representatives of that Association and of the Council prepared a schedule of the high school and collegiate courses which should be required as a minimum. That standard reported in full a year ago provided that an accredited four-year high school course should be required and which should include seven units of required courses, 2 units in English, 2 units in Mathematics (Algebra and Plane Geometry), 2 units in a foreign language (Latin, Greek, German or French) and 1 unit in American History and Civics. The courses for the remaining seven units were elective.

In the enforcement of the four-year high school standard the medical college is urged to secure for each student, direct from the principal of the secondary school attended, a statement showing the courses taken by the student, the number of weeks covered in each course, the number of periods per week, the length of the period in minutes and the final grade obtained. This simple routine procedure secures official and reliable evidence of the work done by the student, and without it no accurate idea can be obtained regarding the student's work. Meanwhile, in the southern states where the development of high schools is an urgent problem no one thing is more important than the adoption by all liberal arts' colleges of this or some other method where the student s secondary school work can be accurately estimated.

ENTRANCE TO COLLEGE BY EXAMINATION

The weakest point in the administration of satisfactory entrance requirements to medical and to other colleges is in the so-called "equivalent-examination" method. The examination is needed to test the knowledge of the occasional student whose courses in the secondary school are not regularly taken but who may have covered as much ground as the graduates. This method of admitting students, however, has been taken advantage of by some "colleges" and an "easy" examination has been provided in order to admit large numbers of students who otherwise could not qualify. The fraudulent methods by which an institution provided credentials for students seeking admission to a medical college in Chicago were published in The Journal of Feb. 7, 1914. A set of questions with the answers filled in were furnished each "student" who was told to take them home, memorize the answers and return in two weeks to take the "examination," where, of course, the same questions would be asked. In one instance, at least, when the time for the "examination" came around, the farce became even more ridiculous. The examiner deputized the preparatory school officer to conduct the examination, which he proceeded to do in the easiest manner for himself and for the students. Examination paper was given out and the students were instructed to take it home, write out the answers which had already been furnished them and return the written papers next day. Thus they did not even need to memorize the answers to the questions asked! Following this farce, nevertheless, these "students" were furnished with affidavits signed in the presence of a notary public, by a county superintendent of schools of an adjoining state, setting forth that these "students" had "passed" examinations in the required branches of the high school curriculum.

THOROUGH AND RELIABLE EXAMINATIONS ESSENTIAL

The chief evil of the examination method lies in the multiplicity of agencies having to do with such examinations, where there could well be only one in each state. To ascertain the actual value of any examination there is a fairly reliable and simple test, which should be applied—require documentary evidence when and in what school or schools the preliminary preparation was obtained. It is practically impossible for a student to pass an examination which actually proves that he has the equivalent of a standard high school course unless he can show evidence of four years or more of attendance in secondary schools, private tutoring or of other legitimate means of preparation. For example, no student could pass a fair examination in algebra unless he has actually studied algebra. So when a student is found to have attended high school only one or two years and yet easily passes an "examination" in all the subjects of a complete four-year high-school course, then it can be seen at once that something is wrong either with the examination or the examiner. A routine method of verification of every credential presented by the student whether it be a diploma or a certificate of examination should be adopted by every well-regulated college.

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[2] The Council has since voted to work toward a legal enforcement of the requirement of college courses in physics, chemistry and biology, but merely to urge colleges to adopt the foreign language requirement. It is believed that the modern foreign language should not at the present time be made a legal requirement.

TABLE 2.—SCHEDULE OF HOURS FOR PRELIMINARY COLLEGE YEAR

Subject	Lectures or Recitations Per Week	Laboratory Periods* Per Week	Total Hours Per Semester	Total Semester Hours Per Year
Physics, 1......	2	2	4	8
Chemistry, 1....	2	2	4	8
Biology, 1......	2 or 3	2 or 1	4	8
German or French, 2	4 or 3	......	4 or 3	8 or 6
Toatl	10	6 or 5	16 or 15	32 or 30

OR, EXPRESSED IN CLASS HOURS:

Subject	Total Hours Lectures, or Recitations	Total Hours Laboratory Work	Total Minimum HoursDidactic and Laboratory
Physics, 1.......	64	128	192
Chemistry, 1.....	64	128	192
Biology, 1.......	64 or 96	128 or 64	192 or 160
German or French, 2	128 or 96	....	128 or 96
Totals	320	384 or 320	704 or 640

* Each laboratory period must extend over at least two hours.

THE PREMEDICAL COLLEGE YEAR

There are now 82 medical colleges which are already requiring for admission one or more years of collegiate work or which have announced their intentions to do so beginning Oct. 1, 1914, and of these 37 have adopted the standard of two or more years of collegiate work. Following the instructions two years ago that the standard of at least one year devoted to college courses in physics, chemistry, biology and a modern language be required of all medical schools listed in Class A, the Council prepared the following minimum schedule of hours for each of those subjects. (See Table 2.)

This schedule was also adopted by the Association of American Medical Colleges.

ENFORCEMENT OF THE STANDARD

In administering this high requirement it has been found necessary to adopt some general rules for the guidance of the colleges. These rules are as follows:—

(1) "College work" could not be considered as acceptable unless it had been preceded by a course in a standard four-year secondary school or its full educational equivalent.

(2) In excellence of teaching and in content, the work of this premedical college year should be at least equal to the work done in the freshman year in standard colleges of liberal arts.

(3) Credits for two or more years of collegiate work should not be considered acceptable unless courses in physics, chemistry and biology have been completed. It is urged that a reading knowledge of German or French also be strongly recommended.

(4) Candidates[3] holding baccalaureate degrees fr approved colleges of liberal arts but who have not taken the required courses in physics, chemistry or biology, may be admitted conditioned in those subjects, such conditions to be removed before entering on the work of the second medical year. So far as possible, however, these deficiencies should be removed during the summer preceding entrance to the freshman medical year and the summer between the first and second medical years.

(5) During the next few years (until 1917) candidates who have completed two or more years of work in an approved college of liberal arts may be admitted conditioned in one-half of the required course in physics or one-half of the course in a modern language, these conditions to be removed before the beginning of the work of the second medical year.

(6) Medical colleges giving these science courses in a premedical year, should provide expert full-time teachers in the various subjects, should provide laboratory equipment sufficient to enable the student to do the work intelligently and should provide a training in the subjects no less thorough than that given in standard colleges of liberal arts.

(7) Postgraduate courses given in high schools by high-school teachers cannot as a rule be considered equal to college courses given by college teachers.

(8) A year of work in a college of dentistry or a college of pharmacy should not as a rule be considered as an equivalent of the required premedical college science year.

The procedure set forth regarding both secondary and collegiate educational requirements is such as will bring the requirements for entrance to medical colleges of the United States into accord with the country's system of general education and not into conflict with it. The administration of these requirements should be such as will aid and not hinder the development of secondary schools and colleges.

THE CLASSIFICATION OF MEDICAL COLLEGES

Three general classifications of medical colleges have been made by the Council following complete tours of inspection. The report of the first was presented to the annual conference and to this body in 1907. That classification was not published but the colleges were notified of their standing and standards based on the data collected were published. Meanwhile it was in that year that the rapid reduction in the number of medical colleges began, and then also began the rapid increase in the number of medical schools adopting higher entrance standards. The Council's second tour of inspection was finished in 1910, and the second classification of medical colleges reported to this body. That classification was ordered published. This same year a report on medical education was published by the Carnegie Foundation, which was of great value in the efforts to secure higher standards.

THE THIRD CLASSIFICATION

The third tour of inspection of medical schools was completed in 1912 and the third classification was published. By that time eight long years of hard work had been spent in the study of medical education and its problems. By that time a systematic routine had been established for the securing of official and reliable information bearing on medical education from state licensing boards, from medical colleges, from liberal arts' colleges, from universities and from other reliable sources at home and abroad. Furthermore a better knowledge had been secured as to what constituted reasonable standards of preliminary and medical education, and these standards had been repeatedly given wide publicity. In the third classification, therefore, the medical colleges were more accurately rated than in the two previous classifications. The ratings now given to medical colleges by the Council are not a mere matter of opinion, nor are they fixed uess-work. They are based on an abundance of verified ble data which can be produced if needed. Never- standard by which the colleges have been measstill comparatively low and in a few years will need to be revised. The improvements in the last ten years have been so marked, however, and the standard of preliminary education has been fixed at a point so reasonably high that it is desirable to go more slowly and to allow time for a careful readjustment under the new order of things.

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[3] At the recent conference on medical education, President A. Lawrence Lowell of Harvard University in discussing the requirement of college courses in physics, chemistry and biology, made a reasonable and timely plea for the college graduate who may not have taken all of those sciences before securing his degree, and asked that some provision be made whereby the subjects in which he was deficient might be made up without the necessity of taking an additional year of work. The Council members believe with Dr. Vaughan, who discussed President Lowell's paper, that a preliminary knowledge of the sciences named is absolutely essential for the student beginning the study of modern medicine. They also believe, however, that these more mature students who have secured a complete college training would not be handicapped if allowed to carry conditions in any of the preliminary sciences in which they happen to be deficient. After careful consideration, therefore, it is believed that this paragraph (4) makes the best provision for such students and at the same time complies with President Lowell's request.

MEDICAL EDUCATION IN THE SOUTH

It is desirable at this time to pay a deserved tribute to the medical colleges of the South for the remarkable manner in which the problems of medical education have been grappled with. Although they have had apparently greater obstacles to work against than were found in other sections of the country, nevertheless it seems these hindrances are rapidly being overcome. They still have to deal with a very large problem, that of preliminary education, but even this is being firmly and admirably met.

In 1907, when the Council's first classification was prepared, the southern section of the country (not including Missouri and Kentucky) had forty-one medical colleges and of these only seventeen, or 41.5 per cent., could be rated in Class A. On the other hand, several were almost entirely without equipment and one was an out-and-out diploma mill. Since that year, however, by mergers or otherwise the total number of medical colleges in this section has been reduced to twenty-four, and of these, 12, or 50 per cent., are in Classes A and A+, and, leaving out of consideration a few of the colleges in Class C, the proprietary feature in medical education has entirely disappeared.

As to requirements for admission, of the twenty-four colleges in the southern section, eighteen, or 75 per cent., are either already requiring the one year of college work in addition to a four-year high-school education, or have announced the requirement to begin this fall. The most serious problems of medical education are no longer to be found in the South, but rather in some of the large cities of the East and North.

THE REORGANIZATION OF CLINICAL TEACHING

In the reorganization of our medical schools one of the most pressing needs is that of placing the clinical departments on a more satisfactory basis. Little has as yet been done in this country with this problem, and the time has arrived when the medical profession and the medical schools must take up this matter vigorously and formulate a general plan of organization of our clinical departments and urge its adoption. With this in view the Council on Medical Education has appointed a strong committee of ten clinicians, who have had great experience in teaching and who are regarded as authorities in their special departments and in medical education, to study this subject and report to the next conference on medical education.

The organization of a clinical department is a more complex subject than that of a department like anatomy, or physiology, where teaching and research are the functions demanded.

In clinical work the head of the department and his associates must be three things; first, great physicians in their special field; second, trained teachers; and third, research workers. The medical school very properly demands that their clinical teachers be men who are recognized as authorities in their special fields both by the profession and the community. In the organization of a clinical department this fact must not be lost sight of and whatever plan is adopted must make it possible for the clinical teachers to remain the great authorities in their special fields both in the eyes of the profession and of the public.

The plan adopted by the German universities has been on the whole most satisfactory. There a professor in a clinical department is in every sense a university professor just as much as the professor of chemistry, or of physics. His university work commands his time. He must allow nothing to interfere with his teaching, his clinical work in the hospital or his research, and he devotes on the average quite as much time to his university work as does his colleague in chemistry or in mathematics. In addition to this, however, he devotes some time each day to private practice by which he maintains his position before the profession and the public as a great specialist. This can be done without neglecting his university position. In fact, if he does not remain the great physician, he ceases to be of as much value either to his students or to his university. On the other hand, if he should neglect his university work because of the time he devoted to private practice, his services should be dispensed with.

This problem of clinical teaching has been taken up during the year by the General Education Board and, as a result, an interesting experiment is to be tried at Johns Hopkins and possibly at one or two other places. The General Education Board has given Johns Hopkins $1,500,000 endowment with which to pay salaries to the departments of medicine, surgery and pediatrics. The position is taken in this experiment that the head of a clinical department should be given a very large salary and should receive no fees from private practice. It was recognized at once that the rich should not be deprived of the services of these experts, so the grotesque plan is proposed that these men may do private practice but that fees from that practice are to be turned into the university treasury and not into their own pockets.

The men who proposed this plan, and provided the money necessary to make the experiment, are non-medical men; they do not have the medical point of view and they do not understand the complex functions demanded of the clinical teacher.

This plan has not been well received by the clinical teachers and finds its supporters almost entirely among the laboratory men. It is difficult to understand if the teachers in a medical school are to be placed on salaries and not permitted to receive any compensation for outside work, why the clinical teacher should be given a very large salary and his colleague in anatomy, or in pathology a comparatively small one. The sweating of the scientific men who have devoted their lives to teaching and research on miserable salaries is notorious. Advantage has been taken of the fact that their scientific enthusiasm would hold them to their work and they are often as underpaid comparatively as the workers in a sweat shop. Surely, if the medical department of a university receives large endowments for the payment of salaries, the men teaching in the laboratory sciences should receive the first consideration. Again, if a clinical department obtained large sums for salaries, why should they pay a very large salary to the head of the department who in a very limited amount of time devoted to practice could obtain for his services much more than the amount of such salary? Would it not be better to devote the available money to paying several younger men from 25 to 35 years of age—their more productive years—to devote practically all their time to teaching and research? Fortunately for the plan, the men who are responsible for it recognize that it is an experiment and frankly advise that it be not adopted by other medical colleges until it has been tried out on Hopkins.

The fact that such a plan has been seriously proposed by laymen interested in education, emphasizes the necessity of a thorough reorganization of our scheme of clinical teaching along lines to be determined and agreed on by a committee of our best clinical teachers.

THE HOSPITAL INTERN YEAR

During the last year the Council has continued its investigation of the hospital situation of the country and the subject of the required hospital year. The subject is a large one and it will be some time before a complete report can be presented. Sufficient progress has been made, however, so that certain general statements can be made.

I. There are enough good hospitals in the country to afford internships each year to every man now graduating in medicine.

II. The better schools are practically unanimous in favoring the adoption of the compulsory hospital intern year.

III. It is the general opinion that this requirement should be enforced by the state licensing boards. The licensing board of each state, therefore, should be urged to adopt a ruling making this hospital year a requirement for the license to practice in that state or if necessary to secure such modification of the medical act as may be necessary to put such a requirement into force.

IV. In the adoption of this hospital year requirement we would urge that it be made compulsory for students entering medical schools in October, 1914, which would make it apply to all graduates of 1918 and thereafter. This will give ample time for a complete investigation of the hospital situation of the country; time for each school to put itself in touch with the hospitals within its sphere of influence and to provide opportunities for its graduates. It will allow time also for the state boards to develop the machinery necessary to put the requirement into effect.

A first report of the hospital situation will be issued during the present year.

POSTGRADUATE MEDICAL INSTRUCTION

Provision has been made for a careful investigation of postgraduate medical instruction and the inspection of the postgraduate medical schools of the country has already begun. A special committee of the Council with Dr. H. D. Arnold as chairman has the work in charge. A preliminary report was presented at the last conference. Rather than "postgraduate" education, it was shown that it would better be described as "graduate" education, which is the term customarily used by universities. The objects of graduate medical instruction were:

1. To offer advanced instruction and opportunities for research.
2. To prepare physicians for special fields of work.
3. To offer opportunities for review, and for keeping in touch with the advances in medical science since the physician graduated.
4. To make up the deficiencies in previous medical education.

ADMISSION REQUIREMENTS

It is evident from the discussion of the scope of graduate medical instruction that there can be no uniform admission requirements of an educational nature, such as may be reasonably imposed on undergraduate medical schools. Adequate preparation of an individual to take any given course should, however, be insisted on. As a matter of benefit to the public, any earnest, reputable practitioner, licensed by the proper authorities to practice medicine on the public, should be allowed to take such courses as he is qualified for by previous training and experience.

CERTIFICATES

It is generally recognized that the loose regulations about granting certificates for "postgraduate" work often result in a definite evil. Such a certificate usually has a form similar to a diploma. It is suitable for display and is calculated to impress the public. Ordinary people are apt to regard such a certificate, displayed in a doctor's office, in much the same light as a degree, and they look on its possessor as a full-fledged specialist in any subject mentioned on the certificate. Advantage is taken of this fact by unscrupulous physicians who pose as specialists without any real justification in the knowledge or experience they have gained. Such practice is little short of quackery. The American Medical Association should use its influence to correct this evil, for the whole profession suffers in reputation on account of the poor work done by such so-called "specialists." The graduate school should under no circumstances be conducted or considered as a "credential mill."

PROPRIETARY SCHOOLS

While graduate medical instruction has been taken up by many of the regular medical schools, there have arisen a number of proprietary "postgraduate" schools. Some of these are doing excellent work and have satisfactory ideals, but many are little better than commercial enterprises for the direct or indirect financial benefit of those in control. The situation in regard to proprietary graduate schools is the same as existed among regular medical schools before the Council on Medical Education began its campaign. Possibly conditions are worse. There are the same objections to proprietary graduate medical schools as to proprietary undergraduate schools. It is to be hoped that those which are really doing good work will see the advantage of association with a medical school or university of good standing. The standards of instruction and the ideals of the graduate school should be fully as high as those of the undergraduate medical school. Puplic opinion will frown on commercialism in graduate medical instruction just as much as it does in undergraduate teaching.

THE OBJECT OF THE COUNCIL IN INVESTIGATING GRADUATE MEDICAL SCHOOLS

The ultimate object of the Council on Medical Education is to furnish more competent physicians for the community. For the attainment of this object it is not only necessary to raise the standards for the degree of Doctor of Medicine, but it is desirable to encourage and to regulate graduate medical study. Only through the latter means can the Council reach physicians already in practice. Up to the present its endeavors have been concentrated on the undergraduate schools. It believes that the time has now come when it may advantageously take up the other work also.

The recent and rapid improvement in undergraduate medical schools will result in turning into the profession hereafter better trained physicians. Something, however, needs to be done for the multitudes of doctors who are already in practice, many of whom graduated from medical schools which could not give them the desired training. In the interests of the communities where these doctors practice, nothing is more important than that graduate courses in medicine should be developed in this country, so that these doctors can take additional work, to the benefit both of themselves and of their patients. Some of these doctors have realized their needs sufficiently to sacrifice the time and money required to take graduate work abroad. How much more important it is that those who do not at present realize their needs, or those who cannot afford these foreign trips, be given the opportunity nearer home to secure additional training.

AN INVESTIGATION OF PRESENT CONDITIONS ESSENTIAL

Recommendations based on the knowledge thus obtained will follow. The problems are in many respects different from those of the undergraduate schools. It has already been noted that there can be no uniform admission requirements of an educational character. While the scope of a graduate school may reach from elementary to the most advanced courses, few will be able to cover satisfactorily the whole range of such studies. The extent of the course cannot, therefore, be a basis for approval; neither can the length of time the graduate stays at the school. The quality of the work must, of course, be up to the standards already fixed, if the courses are of undergraduate grade. The problem of standards for more advanced courses is a new one.

Whether or not it will be wise to attempt a classification of graduate schools remains to be seen. It is evident that any system of classification must be more complicated than the present classification of medical schools. One school may have excellent opportunities for instruction in clinical subjects, but may be very poor in the laboratory courses; or the reverse may be true. Schools should be encouraged to do only such work as they can do well, but they should in some way receive proper recognition for good work, no mattter how limited the field is. In a medical center, where there are two or more schools, it would seem desirable to arrange some plan for cooperation between the schools in graduate instruction. Each school can do the work for which it is best equipped, or in which it is most interested.

The more the subject of graduate medical instruction is studied the more important it appears in relation to the proper care of the public. The object of the Council is to helpful to those schools which wish to give good instruc- of this sort, and to gather reliable information for the efit of those who are seeking for such instruction.

RECAPITULATION

The following facts will show in a measure the progress made in medical education during the first decade of the existence of the Council on Medical Education:

(a) Instead of having 160, or one-half of the world's supply of medical schools, this country now has about 100, and these have been greatly improved in every respect.

(b) Instead of only four medical colleges requiring one or more years of college work for admission there are now eighty-two which either have already put that requirement into effect or have definitely voted to do so beginning this fall.

(c) Eighteen state licensing boards have adopted the requirement of one or two years's of college work as their minimum standard of preliminary education, and three other states will have adopted that requirement before the summer is over. Of these twenty-one states, seven require two years of collegiate work as the minimum standard.

(d) The licensing boards of thirty-one states are now using their legal powers to refuse recognition to low-grade medical colleges, leaving eighteen boards which do not have legal authority so to do, or which are not utilizing that power.

(e) In four more states, New York, Texas, Pennsylvania and Georgia, single boards of medical examiners have been secured replacing the old arrangement whereby the authority to enforce the requirements of the practice act had been parcelled out to three separate and often conflicting boards. Single boards are still seriously needed in three or four states, chiefly in Arkansas and Florida.

(f) Great improvements have been made in the administration of entrance requirements of medical colleges, nevertheless, it is now clearly known that the chief remaining evil is in connection with the so-called "equivalent" examination. Entrance qualifications in this respect need to be better safeguarded.

(g) Three general classifications have been reported by the Council in 1907, 1910 and 1913, respectively. The last has been revised in regard to the ratings of several colleges during the last year.

(h) The present classification of colleges is based on a ten-years' study of medical education including four inspections of practically all medical colleges. The ratings, therefore, are not a matter of guess work but are based on reliable data which are on file.

(i) Twenty-eight states are now supporting medical education and in fifteen of these states the only medical school in the state is the medical department of the state university. There are only ten states having medical colleges in which the states do not contribute directly to the support of medical education.

Other portions of the report are summarized as follows:

(j) There needs to be a reorganization of the clinical departments in our medical schools, whereby clinical teaching may be placed on a more satisfactory basis. Toward this end a committee composed of ten prominent clinicians has been appointed who will bring in a report on this important subject at the next conference of the Council.

(k) Investigation shows that at the present time there are enough good hospitals in this country to provide internships for all graduates of medical schools, and the sentiment of all the better medical schools favors the adoption by state boards of a requirement that before he is eligible for a license every candidate must have served such an internship. It is suggested that such a requirement if adopted by state boards should be made to apply to graduates of 1918 or 1919 and thereafter.

(l) A careful study of graduate medical instruction has been started by a special committee of the Council. The problem differs greatly from that of undergraduate instruction. Admission requirements should be that "any earnest, reputable, licensed practitioner of medicine" would be allowed to take such courses as he is qualified for by previous training and experience. There should be definite regulations in regard to the granting of certificates so as to prevent any suggestion of these schools being diploma mills. These schools eventually like undergraduate medical schools should be developed as departments of universities.

(m) The development of graduate medical education is one of the immediate and pressing needs. There is an abundance of clinical material in our large cities which should be developed so that graduate courses may be taken by physicians who cannot spare the time and money necessary to go abroad. The development of graduate medical education is the next great step in the provision for a better trained medical profession in this country.

The work of this Council has been carried on with a remarkable cooperation, both on the part of the colleges and of the state licensing boards. The results of the Council's work speak for themselves. There is still a great deal of work, however, that this Council can accomplish. The abundance of information collected at headquarters and the experience of the last ten years constitute a valuable working capital and give assurance that the future work of this committee will become more and more effective in the efforts of the American Medical Association to provide the public with better-trained physicians and to carry on a more successful warfare against sickness and distress.

Respectfully submitted,
Arthur Dean Bevan, Chairman,
James W. Holland,
George Dock,
William D. Haggard,
Horace D. Arnold,
N. P. Colwell, Secretary,
Council on Medical Education.

Dr. George M. Kober, District of Columbia, Chairman, presented the report of the Committee on Red Cross Medical Work, which was referred to the Reference Committee on Reports of Officers.

Report of the Committee on Red Cross Medical Work

To the Members of the House of Delegates of the American Medical Association:

The Committee on Red Cross Medical Work was created at the 1912 session as the result of a communication from the chairman of the Central Committee of the American Red Cross requesting the appointment of a committee to consult and advise with a committee of the American Red Cross as to the best arrangements to be made for medical relief in times of disaster. In accordance with Section 3 of Chapter VIII of the By-Laws, the President appointed the undersigned Committee.

In February, 1913, a communication was addressed to the secretaries of 1,150 component societies affiliated with the American Medical Association. The circular letter set forth the fact that the American Red Cross desires to enlist the sympathy of the medical profession in general and the active cooperation of representative men of that profession in time of disaster or other emergency which may occur in any section of our country. This communication pointed out that the object could be best attained by the creation of committees on Red Cross medical work in every county medical society.

Your committee believes that after securing the appointment of such committees with names and addresses, the Red Cross will be assured of the services of qualified medical men and that it will not be a difficult matter for that organization to effect a concert of action between the various activities of the Red Cross in any community, by such measures and by such individuals within its organization as might seem best to bring about the result. This circular was reprinted in the *Bulletin* of the American Medical Association in such a manner that it could be removed and placed with the memoranda of the secretary for consideration and action at the next meeting of the county society (Appendix A[1]).

In response to this action, fifty-seven county medical societies in twenty-four states appointed committees by May 1, 1913. During the veterans' encampment at the celebration of the fiftieth anniversary of the Battle of Gettysburg, July 1-4, 1913, the Red Cross was called on to assist the Army in the work of taking care of the veterans, and the physicians who performed the work on that occasion were chosen by the Committee on Red Cross Medical work of the Medical Society of the District of Columbia. The report of Dr. Robert U. Patterson, Major, Medical Corps, U. S. Army, in charge of the First Aid Department, indicates how satisfactorily the plan will work in any and all of the emergencies in which the Red Cross may be called on for the mitigation of human suffering and the saving of lives.

In October, 1913, Dr. Patterson requested your committee to expedite the formation of local Red Cross committees in state and county medical societies. This request was based on the fact that during the summer, matters requiring the intervention of the Red Cross and the services of reputable medical men had come up in various parts of the country, but owing to the lack of local committees in the medical societies there was considerable difficulty in getting reputable men to act for the Red Cross (Appendix B).

In order to solve this difficulty temporarily, the Secretary of the American Medical Association volunteered to furnish the American Red Cross with the names of the president and secretary of any county medical society in which no committee had yet been formed, so that these officers may be called on to recommend competent men for emergency work. This plan will answer as a temporary expedient, but in view of the frequent changes in the personnel of the officers, it will be necessary to telegraph first to the Chicago office to secure the latest list of names and addresses and then to the respective officers for assistance.

All of this involves expense and delay and can be obviated by the organization of permanent committees. The First Aid Department of the Red Cross, on the appointment of such committees, proceeds at once to get in touch with the organization, prepares and keeps for reference a card index of the names of the individual members of the committees, and also of the physicians recommended by them. Committees which have been appointed and have not recommended men for active service are reminded from time to time to do so, as indicated in Appendix C.

In view of the possibility that the Red Cross may be called on to give actual assistance to the armed forces of the United States (which is one of the principal obligations of the Red Cross and the primary reason for its existence), your committee recently addressed a second circular letter to the secretaries of the county medical societies who have not yet responded, urging immediate action. A letter signed by Major Patterson in charge of the First Aid Department accompanies the printed letter and requests the names of the gentlemen composing the committee, and also the names of physicians who are willing to enter the service of the Red Cross, if called on, and who are recommended as fully qualified in the opinion of the local committee (Appendix D).

By these methods it is hoped that the Red Cross will soon have a creditable enrolment of physicians. In this connection it may be of interest to note that the Red Cross has an enrolment of nearly 5,000 trained nurses, many of whom are ready to respond for service on very short notice.

Appendix E was issued by the Bureau of Medical Service of the American Red Cross, May 1, 1914, and is of interest since it contains information as to the classification of individuals needed for work in case of war, the organization of field columns, hospital columns, supply columns, physical requirements, compensation, etc.

The committee takes pleasure in reporting that up to May 1, 214 county medical societies located in thirty-seven states, including the District of Columbia, have organized committees on Red Cross medical work: Alabama 4, Arizona 2, Arkansas 8, California 5, Colorado 2, Connecticut 5, District of Columbia 1, Florida 3, Georgia 5, Illinois 14, Indiana 18, Iowa 16, Kansas 5, Kentucky 9, Louisiana 3, Maine 3, Massachusetts 3, Michigan 3, Minnesota 3, Mississippi 6, Missouri 10, Montana 1, Nebraska 6, New Jersey 1, New Hampshire 2, New Mexico 1, New York 15, Ohio 10, Oklahoma 7, Pennsylvania 10, Rhode Island 3, South Carolina 2, Tennessee 6, Texas 10, Virginia 3, West Virginia 3, Wisconsin 5, total 214.

The clouds of war which appear to threaten our country may pass away, but it is a patriotic duty to be prepared for each and every disaster which may befall some section of our broad land, whether caused by war, floods, tornadoes, forest-fires, mine-explosions or other catastrophies. In order that there may be a comprehensive system of cooperation between the Red Cross and the American medical profession in the mitigation of human suffering and distress, your committee recommends prompt action by all the medical societies in affiliation with the American Medical Association.

Respectfully submitted,
GEORGE M. KOBER, M.D., Chairman.
WILLIAM J. LYSTER,
Major, Medical Corps, U. S. Army.
E. M. BLACKWELL, Surgeon, U. S. Navy.

On motion, which was duly seconded, the House of Delegates adjourned until 2 p. m.

Second Meeting—Monday Afternoon, June 22

The House of Delegates reconvened at 2:15 p. m. and was called to order by the President.

The Secretary announced a quorum present.

The minutes of the previous meeting were read and approved.

Dr. D. Chester Brown, Connecticut, Chairman, presented a supplementary report from the Committee on Credentials, naming the delegates entitled to be seated.

Dr. Frank B. Wynn, Indiana, Chairman, presented the report of the Committee on Scientific Exhibit as follows, which was referred to the Board of Trustees:

Report of Committee on Scientific Exhibit

In order to expedite the work of the Scientific Exhibit it is urged that the President of the Association be empowered to appoint at once a Committee on Awards, in order that they may give due consideration to the relative merits of exhibits. The usual appropriation of $1,000 is recommended for the development and maintenance of the Scientific Exhibit for the ensuing year.

It is not the purpose at this time to particularize as to exhibits or exhibitors, these being scheduled in the official program. While the exhibit deals with a wide variety of subjects, yet the thing most apparent is that the live topics related to both medicine and surgery are made prominent. Diagnosis by the Roentgen ray in the nature of things occupies a large space. The cancer problem justly receives conspicuous consideration, being represented by no less than eight exhibits, showing chiefly modern researches; some of them interesting and most suggestive. Most of all, perhaps, the visitor to the exhibit will be impressed by the large number of research exhibits, some representing original work never before shown, and dealing with practical problems of medicine and surgery. These number seventeen. Enumeration of some of the subjects with which these research exhibits deal will give an idea of their scope, the line of investigation pursued and the great interest they must arouse:

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[1] Appendices A, B, C, D and E are here omitted, because of lack of space. All will appear in the reprint of the Proceedings of the House of Delegates. Appendix A also appeared in THE JOURNAL, Correspondence Department, May 9, 1914, p. 1493.

Experimentally induced pneumonia.

Experimentally produced hydronephrosis.

Effects of collargol injections of the kidneys in dogs.

Lateral blood-vessel anastomosis in the cure of arteriovenous aneurysm.

Relation of gastric ulcer to cancer.

Effect of diet on tumor growth.

Hereditary factors in mice cancer.

Specimens showing communication of erythema nodosum to dogs.

Effects of chronic lead-poisoning on the livers of guinea-pigs.

The effect of feeding pituitary extract in hastening genital development in rats.

Fortunately those who are presenting these exhibits will take much time and great pains in demonstrating them to the members of the Association.

In this fifteenth year of the Scientific Exhibit's hostory one is prone to revert to some phases of its evolution. The earlier presentations were essentially large, museum-like collections of pathologic specimens. Some such are still presented. They are interesting and teach valuable lessons. Their weakness lies in their heterogeneous make-up. They present a vaudeville-like exhibition of great variety in rapid succession, which entertains and in a limited way instructs. The individual is gorged with miscellaneous facts which are not properly digested. Many excellent men, eminent as teachers, are still laboring under the erroneous impression that what we want in the Scientific Exhibit is the large museum collection. Accordingly they hesitate to participate because of the great labor, expense and loss from breakage in transportation.

Long experience and observation have taught use that from considerations both of economy and of usefulness, the bulky heterogeneous exhibit should give place to the smaller serial exhibit or better still the research exhibit. A single topic, illuminated from every aspect by an exhibit which is systematically arranged and efficiently demonstrated, will drive home a lesson in a manner not to be forgotten. It is like the great play which revolves about one central idea, holding it up with power and impressiveness before the auditor and observer. The memory cannot escape an indelible impression.

Exhibits like those just suggested offer ususual opportunities alike to exhibitor and to observer. To the former it gives the rare privilege of setting before the profession his work, bringing appreciative consideration; it not only enables the visiting member to catch the practical advances in medicine and surgery, but also shows him the keen edge of scientific progress. Thus is the way made plain for the practical in medicine—the art of our profession.

We would urge on the members of the House of Delegates attendance at the Scientific Exhibit, not merely as a perfunctory duty, but as a privilege of this meeting which no member of the Association can afford to miss. The Scientific Exhibit is your child—virile and hopeful and yet needing the poise and practical direction of your sober judgment. The exhibitors are bearing splendidly the light of advancing scientific thought. It is for you to shade that light and reflect its rays into the practical ways of professional life.

Frank B. Wynn, Director,
Louis B. Wilson,
C. C. Rosenow,
C. C. Bass,
R. C. Coffey,
Alfred Stengel,
W. S. Thayer,
S. B. Wolbach,
Ross McPherson.

The President appointed as a Committee on Awards for Scientific Exhibits, Drs. D. H. Murray, New York; Richard M. Pearce, Pennsylvania, and W. J. Means, Ohio.

Dr. Cressy L. Wilbur, District of Columbia, Chairman, presented the report of the Committee on Nomenclature and Classification of Diseases, which was referred to the Board of Trustees. The report follows:

Report of Committee on Nomenclature and Classification of Diseases

To the Members of the House of Delegates of the American Medical Association:

As stated in our report last year, your committee has been in correspondence with the committee of the Royal College of Physicians of London appointed to prepare the fourth decennial revision[1] of the English nomenclature of diseases. In a recent letter to Dr. Leonard Guthrie, Secretary of the Nomenclature of Diseases Committee, I wrote on behalf of our committee:

> "In correspondence with the members of our committee there is a general desire to delay our report, making only a report of progress at the next meeting of the American Medical Association, June, 1914, in order that we may be able to learn the results of your preliminary work, to exchange ideas on certain points therein, if it seems feasible to do so, as kindly suggested in your note, with a general view to the promotion of a close correspondence between the nomenclatures used in the two countries.
>
> I would therefore greatly appreciate it if you could furnish me with any information in regard to the progress of your work, any general recommendations, etc., so that our committee may incorporate them in our report of progress to the House of Delegates of the American Medical Association next June."

Should such information arrive prior to the presentation of this report it will be appended. The great advantages of cooperation to the end that the nomenclatures of diseases employed in the English-speaking world may be in close accord are so obvious that it would seem wiser to defer the preparation of a final report for the present. Moreover, in view of the relations of the proposed form of our nomenclature to the International List of Diseases and Causes of Death, employed for morbidity and mortality statistics, and the approaching date for the decennial revision of this system—which may introduce radical changes in its general arrangement—it is believed that more will be gained by deliberation at the present juncture than by precipitate action. It is therefore suggested that the committee be continued, with power to add to the list of its collaborators in order to consider special phases of the work, in conjunction with the English committee as far as practicable, and that it also devote some attention to the preparation of suggestions for the revision of the International List, which, if accepted as the outline or form for the arrangement of general morbidity, mortality and hospital statistics, has important relations to the subject of nomenclature proper.

In this connection it is of interest to state that a second edition of the Physicians' Pocket Reference to the International List of Causes of Death has been sent by the Bureau of the Census to all physicians in the United States. Copies have also been placed, through their instructors, in the hands of senior medical students. The booklet contains a list of undesirable terms, framed as a result of the conferences of this committee, during Doctor Foster's chairmanship, with committees of other national organizations, which are thus brought forcibly to the attention of physicians throughout the country with the recommendation that they be disused. Marked copies of this list are sent to physicians employing such terms in making out certificates of death by the census, state and city registration authorities, and sometimes by other agencies in connection with the request for more definite information. It is apparent, therefore, how readily a standard nomenclature may be made available for the improvement of medical reports.

Respectfully submitted,
Cressy L. Wilbur, Chairman,
Robert J. Carlisle,
Alexander Duane,
Frank B. Mallory,
Wilber E. Post,
George Dock,
J. Chalmers Da Costa,
Warren Coleman.

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[1] Fifth Edition.

Dr. James T. Gwathmey, New York, a member of the Committee on Anesthesia, presented the report of that committee, in the absence of the Chairman, Dr. W. D. Gatch. The report is as follows and was referred to the Board of Trustees:

Report of the Committee on Anesthesia

To the Members of the House of Delegates of the American Medical Association:

In the report of this committee submitted to the House of Delegates last year it was proposed that the work of this committee should in future be conducted along the lines so successfully followed by the Council on Pharmacy and Chemistry: namely, that the Committee on Anesthesia should undertake the preparation of a comprehensive and critical review of the entire subject of anesthesia, and that the information therein contained should be made easily accessible to all physicians either by publication in The Journal of the Association or in pamphlet form. Our well-known shortcomings in anesthesia were cited as evidence for the need of such a report. This proposal was approved by the House of Delegates.

The committee now has the pleasure of reporting that a good beginning has been made in carrying out this plan. The members of the committee who had opportunity to do so have carried out experimental and clinical investigations which have been embodied in the complete report. We have deemed it best to secure the assistance, whenever possible, of original investigators of important questions bearing on anesthesia, thereby making the information contained in our review first-hand. For such assistance we desire to express our thanks.

We have sought to lay especial emphasis on the fundamental scientific principles of anesthesia, since such information is not always easily accessible, and since success and progress in practical anesthesia is largely dependent on a correct understanding of these principles.

The titles and authors of the various articles of the review are as follows:

Intratracheal Insufflation, Samuel J. Meltzer.

The Theory of Anesthesia, Evarts Graham.

Anoci-Association, George Crile.

The Present Status of the Acapnial Theory of Shock, Yandell Henderson.

Present-Day Methods of General Anesthesia, James T. Gwathmey.

Rectal Anesthesia by the Use of Mixtures of Oil and Ether, James T. Gwathmey.

Present-Day Methods of Local Anesthesia, James Mitchell.

Recent Studies of the Physiology of Anesthesia, W. D. Gatch.

We are aware that there are many more subjects which deserve to be covered in this review, but we have deemed it best at the present time not to attempt more than we have. We hope that if the present review is well received, subsequent committees on anesthesia may add to it from time to time.

Respectfully submitted,
W. D. Gatch, Chairman,
Reid Hunt,
James T. Gwathmey,
Thomas S. Cullen,
Evarts Graham.

Dr. Henry B. Favill, Illinois, Chairman, presented the report of the Council on Health and Public Instruction, which was referred to the Reference Committee on Legislation and Political Action.

Dr. Thomas McDavitt, Minnesota, Chairman of the Subcommittee on Uniform Regulation of Membership, presented the report of this committee, which was referred to the Reference Committee on Legislation and Political Action.

The reports of the Council on Health and Public Instruction and its subcommittees follow:

The Report of the Council on Health and Public Instruction[1]

To the Members of the House of Delegates of the American Medical Association:

The plans of the Council have now developed to a point where a comprehensive program can be outlined, which will embrace all of the present and future activities of the Council and will show clearly their relation to each other, their relative importance and the order in which they can be taken up. In outlining such a program, the Council assumes that its primary object is to place before the profession and the public of the United States the objects, purposes and work of the organized medical profession, as represented by the American Medical Association and its constituent and component branches, and to place the Association and its efforts before the public in such a way as to secure public support and endorsement for our efforts for the improvement of public health conditions in the United States.

Careful study of the present situation leads to the conclusion that a rational program must include three general lines of action. These are:

1. A thorough investigation of present public health conditions in the United States, with a view to securing more accurate information on all phases of the public health problem than is now available.

2. Education of the public by every possible means in order that the people may understand the enormous advances in scientific medical knowledge during the last generation and the possibility of utilizing such knowledge in the prevention of disease, the reduction of the death-rate and the prolongation of human life.

3. The crystallizing of such educated public sentiment in necessary public health laws, regulations and ordinances, which will render possible a conservation of human life commensurate with our advancing knowledge and which will render such laws effective through the only force available in this country, namely, educated and enlightened public opinion.

Under the first head, namely, the investigation of the present public health situation, the need for additional knowledge naturally divides itself into four subheads:

(*a*) The first is the need of a survey of the public health activities of the federal government in all of its departments, with a view to determining exactly what the federal government is doing for public health. Closely related to this is the desirability of a similar survey or investigation of the public health activities of other national governments, for purposes of comparison.

(*b*) The second important field for investigation is that of state public health activities. There is to-day, in every state in the Union, some form of public health organization. Owing to our form of government, each of these organizations is working independently. As the reports of the various state boards are not made on a uniform basis, a comparison of their various activities and a tabulation of the results secured by their efforts is difficult. It is, therefore, practically impossible to-day to summarize the public health work which is being done by the different state boards of health, to compare one with another or to establish any standard by which their relative merits may be determined. The first necessity for such a comparative study of state public health activities is clearly a collection of authoritative, official data on the subject. Realizing the importance of this field of investigation, the Council has given the subject careful consideration and has been fortunate in securing the assistance of one of the leading public health authorities of the country in carrying on a study of state public health work. Beginning Jan. 1, 1914, Dr. Charles V. Chapin, Commissioner of Health of Providence, R. I., was appointed as special representative of the Council and directed to make a comparative study of the activities, equipment and accomplishments of the various state boards of health. During the past five months, in accordance with the plans formulated by Dr. Chapin and the

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[1] This report, and the reports of some of the subcommittees of the Council, have been greatly abbreviated for publication in The Journal. The complete report will be sent on receipt of a stamped, directed envelope.

Council, he has been visiting the various state boards, from time to time, and making a personal study of their condition. He plans to complete this study during the present year. The results of his observations will be presented later on in the form of a report on state public health work.

(*c*) Of equal importance to the federal and state public health activities is the work being done by the various municipal health organizations. Any study of public health conditions in the United States, to be complete, must include a careful survey of municipal public health work. In this field, as in that of federal health work, some practical difficulties have been encountered. The Council is planning a study of municipal health activities and hopes to have this work inaugurated during the coming year.

(*d*) The fourth important field of public health work which must be given careful attention, in order that the data on this subject may be complete, is that of voluntary public health organizations. The importance of such bodies, in supplementing and often in stimulating official organizations, is well known. One of the plans which the Council has been developing for the last two years is the coordination of the various voluntary public health organizations. An account of the efforts of the Council in this direction appeared in the report of last year.

The Council . . . deeply regrets that nothing definite has been accomplished in this field during the past year. The Council through its Chairman and Secretary has made every effort to secure some advance without forcing the Association into a position which it was felt would be unwise. The Council greatly prefers that this survey should be taken up and carried on by the organizations themselves, but if this is not done, the Council will be forced to consider plans for carrying on this work on its own initiative.

The object of the foregoing efforts of the Council is the securing and presenting, in concise and easily accessible form of a comprehensive report showing the exact situation in the public health field, the agencies which are at work, what is being accomplished, how much it is costing and who is paying for it. Such a survey seems to the Council absolutely indispensable as a foundation for any permanent, constructive work in this field. The Council, in developing these plans, has encountered some unnecessary difficulties and has found some problems to solve which were not anticipated. It intends to continue its efforts during the coming year in the hope that during 1915 it may present to the profession and the public a report that will be accepted as authoritative in this field.

The second fundamental function of the Council is that of the education of the public on health matters. While theoretically the securing of the information as outlined above ought to precede such educational efforts, the Council has recognized, since its organization, the necessity of wasting no time and of using every means to place before the public the facts regarding disease and its prevention. It has, therefore, while developing its plans for securing necessary information, been carrying on, simultaneously, plans for the education of the public. The activities inaugurated during the last three years have been maintained and developed. These are principally included under the following heads: (*a*) Press Bureau; (*b*) Speakers' Bureau; (*c*) Bureau of Literature.

PRESS BUREAU

The Press Bureau, established two years ago, has been maintained throughout the year. Forty-two bulletins have been sent out to a mailing-list of approximately 4,900 newspapers at a total cost of $2,309.00 The effect of this sustained effort to supply the newspapers of the country with well-written authoritative paragraphs and articles on appropriate health topics of popular interest is becoming apparent.

SPEAKERS' BUREAU

The Speakers' Bureau, established last year, has been maintained throughout the year. The list shows the number of appointments filled by speakers in accordance with arrangements made by the Speakers' Bureau direct; and also the number of meetings addressed by speakers, which were more or less directly inspired by the Speakers' Bureau, but which were arranged independently. The table also shows the total number of meetings for which speakers were furnished, the total expense for the eleven months from July 1, 1913, to May 31, 1914, and the average cost per meeting.

BUREAU OF LITERATURE

The presentation of suitable pamphlets and reprints on public health topics has formed one of the principal activities of the Council during the past year.

Correspondence with the various state board secretaries and further discussion of this plan by the Council resulted in the presentation of plans for a series of twelve public health pamphlets as a nucleus for a standard series to be issued during the coming year:

Tuberculosis	Dr. Edward R. Baldwin, Saranac Lake, N. Y.
Small-pox and Vaccination	Dr. Jay F. Schamberg, Philadelphia
Typhoid Fever	Prof. E. O. Jordan, Chicago
Diphtheria	Dr. A. J. Chesley, St. Paul
Flies	Dr. L. O. Howard, Washington, D. C.
Malaria	Dr. W. S. Leathers, University, Miss.
Hookworm	Dr. John A. Ferrell, Washington, D. C.
Medical School Supervision	Dr. H. M. Bracken, St. Paul
Pure Water	Prof. George C. Whipple, Cambridge, Mass.
Measles	Dr. H. W. Hill, London, Ont., Can.
Baby Welfare	Dr. J. H. M. Knox, Baltimore
Scarlet Fever	Dr. Ludwig Hektoen, Chicago

One of the most satisfactory series issued during the past year is the series of twenty pamphlets on conservation of vision, prepared by the Committee on Conservation of Vision under the enthusiastic leadership of Dr. Frank Allport of Chicago, and issued by the Council. This subject will be discussed in detail in the report of the Committee on Conservation of Vision.

An additional pamphlet has been added during the year to the Defense of Research Series, forming Pamphlet XXVI, entitled "The Charge of 'Human Vivisection' as Presented in Antivivisection Literature," by Prof. Richard M. Pearce, M.D., of the University of Pennsylvania.

Additional pamphlets in the general public health series include a reprint of the New Orleans address by Dr. Henry B. Favill, Chairman of the Council, given before the Mississippi Valley Medical Association on "Child Culture the Function of Organized Medicine," the reprint of an address by Dr. Joseph C. Bloodgood of Baltimore on the "Control of Cancer," the report on the "Municipal Regulation of Milk Supply" by Prof. E. O. Jordan at the Midwinter Conference, February, 1913, and a reprint of the paper read at the Midwinter Conference by the Secretary entitled "Sixty-Seven Years of Medical Legislation."

MEDICOLEGAL PAMPHLETS

Pamphlets on medicolegal subjects include monographs on "Laws Prohibiting Fraudulent Advertising," "State Regulation of Marriage," "Why Should Births and Deaths Be Registered," and "Laws for the Sterilization of Criminals." Other medicolegal monographs are in preparation.

SEX HYGIENE LITERATURE

The need of carefully prepared literature on sex hygiene has been apparent for some time. Owing to the amount of public interest in this subject, we have been receiving constant requests for such literature. Under the direction of the Council, the Secretary arranged for Prof. Winfield S. Hall of Northwestern University Medical School of Chicago to submit manuscripts on four sex hygiene pamphlets, two for girls and two for boys. Dr. Hall prepared these manuscripts in the story form. They have been issued in four attractively printed pamphlets which are having a wide circulation. The titles of these little stories are "John's Vacation," "Life's Problems," "The Doctor's Daughter," and "Chums."

CANCER PAMPHLETS

Owing to the public interest in cancer and its prevention, and the statement in a recent book by Mr. Samuel Hopkins

Adams, "The Health Master," that appropriate literature on this subject could be secured through the Council, it was thought advisable to arrange for the preparation of a series of pamphlets, suitable for public distribution and giving reliable, scientific information regarding cancer and its prevention. In cooperation with Dr. Thomas S. Cullen of Baltimore, chairman of the Committee on Cancer, plans have been made for a series of pamphlets on cancer including the following:

General Pamphlet on Cancer	Dr. Joseph C. Bloodgood, Baltimore
Cancer of the Skin	Dr. Henry H. Hazen, Washington, D. C.
Cancer of the Breast	Dr. William L. Rodman, Philadelphia
Cancer of the Uterus	Dr. Franklin H. Martin, Chicago
Cancer of the Bone	Dr. J. B. Murphy, Chicago
Cancer of the Genito-Urinary Organs	Dr. H. H. Young, Baltimore

Pamphlets on cancer of the stomach and cancer of the rectum are under consideration. The manuscripts of four of the pamphlets have been received and are now in the printer's hands, while the others will soon be completed.

MISCELLANEOUS PAMPHLETS

An accompanying table shows the pamphlets issued by the Council from July 1, 1913, to June 1, 1914, to the number of 57,250.

The preparation of suitable material for direct distribution to the public, the devising of means by which such material can be distributed and the development of writers of high scientific ability endowed with the gift of writing for popular readers are all included in the plans of the Council for development of its Bureau of Literature. It is hoped by steadily increasing the number of suitable pamphlets to build up a series which will cover practically every phase of medicine in which the public is interested.

EDUCATIONAL PLANS FOR THE FUTURE

In addition to carrying on the Press Bulletin, Speakers' Bureau and Bureau of Literature, and adding to their equipment and method of operation from time to time as necessity may demand or as the growing importance of these activities may justify, the Council also has plans for developing in the future several other methods for public education. Probably the most important of these, as well as the one most in harmony with present tendencies toward the use of pictures in education, is the development of a Lantern-Slide Loan Bureau, by which sets of stereopticon slides, prepared by recognized authorities and accompanied by a skeleton lecture or outline containing the essential facts on the subject, can be loaned to officers and members of county societies, physicians and others interested in educating the public on health topics.

Plans for such a bureau have been outlined and this work will be taken up as soon as other activities permit. Equally important is the preparation of small, portable exhibits which can be shipped to different parts of the country for exhibition in connection with conventions and public meetings of all sorts. The preparation of such exhibits, on the part of the Council as representing the Association, involves the consideration of a number of scientific, psychologic, pedagogic and practical problems which can, however, be solved in due time.

MEDICOLEGAL BUREAU

The plans for a Medicolegal Bureau, outlined in the report of last year, have been followed, the principal work at present being the collection of all available material on public health and health legislation. The assistance of secretaries of state boards of health, medical examining boards, officers of medical organizations, editors of medical journals, etc., has been solicited and much interesting and valuable material has been received. Affiliation has also been established with the legislative reference libraries and bureaus which, during the past few years, have been established in many states. Pamphlets and other material have been exchanged with these bureaus and relations established by which we shall be able to furnish all the bureaus of the country with material on public health topics. These workers in the field of constructive legislation are glad to turn over to us the special task of framing public health legislation, as this is a subject on which they are not specially informed. The influence and importance of this relation will be apparent to all those who have followed the growth of laboratory methods in legislation during the past few years.

NATIONAL LEGISLATION DURING THE PAST YEAR

In the field of national legislation, no special activities have been undertaken on the subject of a National Department of Health, principally for the reason that the program adopted by the Conference held May 5, 1913, and reported in detail last year, pledged the Council and the Association to a support of such a public health program as the President might decide to recommend during the next (present) regular session of Congress.

PUBLIC HEALTH SUNDAY IN PHILADELPHIA

One of the most effective means of putting the Association in a favorable light before the people has been the plan of furnishing speakers for the churches on the Sunday preceding the annual meeting of the Association. This plan, inaugurated at Los Angeles in 1911, was particularly successful last year in Minneapolis and St. Paul. This year the small number of churches in Atlantic City and the close proximity of Philadelphia led the Council to propose to the Philadelphia County Medical Society that speakers be furnished for the churches of Philadelphia on Sunday, June 21. This plan being endorsed by the officers of the Philadelphia County Medical Society, arrangements were made for furnishing a member of the Association to deliver an address on a suitable public health topic for every church in Philadelphia desiring to avail itself of this opportunity. Speakers were provided for 50 churches, including organizations for all denominations and sects. In addition, through the courtesy and effective cooperation of the Right Reverend Edmond F. Prendergast, Archbishop of Philadelphia, suitable printed matter was placed in the hands of the 104 parish priests of the Roman Catholic churches in the diocese of Philadelphia. The educational influence of such work cannot be overestimated.

Respectfully submitted,

Henry B. Favill, Chairman.
Henry M. Bracken,
Walter B. Cannon,
Wm. C. Woodward,
Watson S. Rankin,
Frederick R. Green, Secretary.

REPORTS OF SUBCOMMITTEES OF THE COUNCIL ON HEALTH AND PUBLIC INSTRUCTION

Committee on Resuscitation from Mine Gases

To the Council on Health and Public Instruction:

As stated in the last report of the Council, a Committee on Resuscitation from Mine Gases was appointed by the Chairman of the Council at the request of Dr. J. A. Holmes, Director of the Bureau of Mines of the United States Department of the Interior. The committee visited mines in both the soft coal and the hard coal regions of Pennsylvania, met and had discussions with men engaged in first-aid work, witnessed demonstrations of methods used for first-aid and resuscitation, and studied the apparatus employed in the mines as well as that used by the United States Bureau. As a result of these observations and also as a result of further experiments and critical tests of methods employed for artificial respiration, the committee reported on the best manual method to be used in times of emergency, and suggested a greatly simplified means of giving artificial respiration mechanically. The suggestions made by the committee have been put to practical test by field workers in the Bureau of Mines, and the report of the committee will probably be published during the summer and distributed widely for use in mines where conditions of danger are likely to arise. The committee believes that attention to its suggestions will considerably increase the chances of reviving victims of mine accidents. WALTER B. CANNON, Chairman.

REPORT OF COMMITTEE ON THE PROTECTION OF MEDICAL RESEARCH

To the Council on Health and Public Instruction:

The Bureau for the Protection of Medical Research has given aid through conferences and literature to the New York and Pennsylvania committees of the state organizations that are concerned with the opposition to antivivisectionist activities. In New York a vigorous attempt was made to obtain an investigation into laboratory and hospital conditions based on the claim that in the hospitals children were being unscrupulously used for vivisection purposes. This claim was proved to be baseless and the attempt at legislation failed.

In Pennsylvania the trial brought against certain members of the Medical Department of the University of Pennsylvania resulted in a disagreement of the jury. The charge of the judge has generally been regarded as strongly biased against animal experimentation, and his attitude has been applauded only by the antivivisectionists. Although the trial resulted unsatisfactorily to either side, it has had the remarkable effect in calling forth strong commendation of the experimental method as applied to medicine both from bodies of medical men and also widely from editors of influential journals all over the country.

Dr. Richard M. Pearce, a member of the Bureau, prepared a paper on "The Charge of Human Vivisection," which brings together a large mass of material constantly used by antivivisectionists and presents strong refutation of the claims which they have made. This paper has been published as No. 26 in the Defense of Research pamphlets.

A letter has been sent out to editors of medical journals in various parts of the country asking that they scrutinize carefully original papers submitted for publication, with the view to eliminating expressions which are likely to be misunderstood and to including a statement that anesthesia was employed when in fact that was the case, in order that the occasion for misinterpretation by antivivisectionists may be reduced to a minimum.

The question arose as to the desirability of organizing in connection with the Bureau for the Protection of Medical Research of the American Medical Association, a lay society. This question was considered in conferences both in New York and in Philadelphia. For a number of reasons, which were accepted as having greater weight than the reasons in favor of a lay organization, it was decided at each of these conferences that the establishment of a lay society is not now expedient. Instead of such an organization, a small group of active men was gathered from Philadelphia, New York and Boston and different members of this group were given different responsibilities in order that there might be helpful cooperation in these cities, which are at present the centers of the antivivisection agitation. The opinion was expressed at the New York and Philadelphia conferences that whenever opportunity arose to meet attacks made by antivivisectionists through newspaper letters, some medical man well acquainted with the facts in question should meet the assertions of the antivivisectionists in letters of rebuttal. This has proved a satisfactory method of spreading information in New York, and has been used effectively this year not only in New York, but also in Boston and Philadelphia.

WALTER B. CANNON, Chairman.

REPORT OF COMMITTEE ON CONSERVATION OF VISION

To the Council on Health and Public Instruction:

There are various state conservation of vision societies existing under different conditions and under varying degrees of activity. Some are independent organizations; others are committees of state medical societies, while others are commissions of the state governments. There is also an inactive national society.

In June, 1913, the Council on Health and Public Instruction appointed a Committee on Conservation of Vision of which I am chairman. Our first work was to prepare a weekly, non-technical article for the Press Bulletin. The eye articles on such subjects as "The Eyes and the Movies," "Face Powder and the Eyes," "Illumination in Homes, Offices, Schools, Shops, Etc.," have been copied in newspapers all over the United States and have accomplished much good.

Our committee has caused to be written twenty short pamphlets on eye topics by well-known ophthalmologists. They are written and illustrated in popular style, have a uniform appearance and are known as "The Conservation of Vision Pamphlets." They sell for 5 cents a copy or $3.50 per hundred. Many are given away. They sell freely and are well advertised. Some are in their third edition. Sets are sent free to public libraries, women's clubs, legislatures, health boards, etc. Arrangements are being made to send Dr. Carroll's pamphlet on "The Eyes of Transportation Employees" to every railroad surgeon in the United States and we propose to make similar use of other pamphlets, sending them where they will do the most good. These pamphlets are excellent material for ophthalmologists to keep in their offices to give away to patients and parents desiring information of this nature. The titles of the pamphlets and their authors are here given:

Pamphlet I.—Schoolchildren's Eyes, by Dr. Frank Allport, Chicago.

Pamphlet II.—Industrial and Household Accidents to the Eye, by Dr. Harold Gifford, Omaha.

Pamphlet III.—Wearing Glasses, by Dr. W. B. Lancaster, Boston.

Pamphlet IV.—The Relation of Illumination to Visual Efficiency, by Dr. Ellice M. Alger, New York.

Pamphlet V.—Trachoma in Eastern Kentucky, by Dr. J. A. Stucky, Lexington, Ky.

Pamphlet VI.—Auto-Intoxication and the Eye, by Dr. H. D. Bruns, New Orleans.

Pamphlet VII.—Eye-Strain, by Dr. Hiram Woods, Baltimore.

Pamphlet VIII.—Lenses and Refraction, by Dr. Frank Allport, Chicago.

Pamphlet IX.—The Eye and Its Functions, by Dr. Frank Allport, Chicago.

Pamphlet X.—Care of the Eyes, by Dr. Frank Allport, Chicago.

Pamphlet XI.—Infant Blindness, or Ophthalmia Neonatorum, by Dr. F. Park Lewis, Buffalo, N. Y.

Pamphlet XII.—Ordinary Eye Diseases, by Dr. L. W. Dean, Iowa City, Ia.

Pamphlet XIII.—Usual and Unusual Eye Accidents, by Dr. E. C. Ellett, Memphis, Tenn.

Pamphlet XIV.—The Eyes of Transportation Employees, by Dr. J. J. Carroll, Baltimore.

Pamphlet XV.—Ocular Hygiene in Schools, by Dr. S. D. Risley, Philadelphia.

Pamphlet XVI.—Whisky, Tobacco and Drugs and the Eye, by Dr. Edward Jackson, Denver.

Pamphlet XVII.—The Oculist and the Optician, by Dr. Melville Black, Denver.

Pamphlet XVIII.—Preparation for Blindness, by Dr. F. Park Lewis, Buffalo.

Pamphlet XIX.—What to Do for Blind Children, by Dr. F. Park Lewis, Buffalo.

Pamphlet XX.—Blindness from Wood Alcohol, by Dr. Casey Wood, Chicago.

Desiring to create a national sentiment in favor of the conservation of vision, our committee planned a lecture campaign in almost every state. A prominent ophthalmologist was appointed to manage the campaign in his state. He selected his own assistants and lecturers, and solicited invitations for lectures from local medical societies, women's clubs, teachers institutes, Chautauquas, etc. Expenses should, of course, be paid by those issuing the invitations, but if not, would have to be born by the lecturer himself. The Council allowed the committee to send to each state lecture manager a box of transportable stereopticon slides, together with sufficient conservation of vision phamphlets, vision charts for schools, etc., to furnish ample material for lecture talks. In addition, the committee prepared a pamphlet containing a skeleton lecture which would serve as a guide for the lectures in preparing their talks. It was recommended that the lectures should not last more than one hour and should be followed by demonstrations and discussions. It was urged that while all phases of vision conservation should be explained, especial emphasis should be laid on ophthalmia neonatorum and its elimination by the Credé treatment, the prevention of shop accidents by the use of goggles and other safety devices, and the annual and systematic examination of schoolchildren's eyes by schoolteachers. If these ideas could be carried out 80 per cent. of blindness would be eliminated at almost no expense and but little trouble. And if, while the teachers are making the survey of the children's eyes, they would extend their observations to the ears, noses and throats, which would only involve an additional three minutes per child, the benefits to the children would be increased immeasurably.

It costs $15,000,000 a year to care for the dependent blind in this country. *It would cost less than $250,000 to use the* Credé treatment in the eyes of all newly born babes, to have the eyes, ears, noses and throats of all schoolchildren annually and systematically examined by schoolteachers, and to pay for goggles, etc., in shops to protect the eyes of laboring men. These financial considerations could be carried much further but it is not necessary. These figures alone will show where economy can be found.

The vision charts for schools distributed by our committee o the various states, contain full instructions to teachers—ow they can by asking and answering nine simple questions scertain the existence of 95 per cent. of serious eye, ear nose and throat defects and diseases. These examinations re simple and require no medical education. Teachers hould not attempt to diagnose disease; they merely find hat something is wrong and urge a doctor of the parents hoosing. Five minutes per child is sufficient for each xamination and each teacher should examine her own hildren. By thus subdividing the work all children in any ity can be examined in one day. A definite day in the arly fall should be set aside for these tests. The tests not nly benefit the children but the correction of their defects benefits the teachers, as such corrections add to the intel- ectual and moral character of the child, thus rendering them more pliable and teachable. Teachers should therefore be lad to make these surveys, not only on account of the chilren, but because it makes their own school work much asier. If boards of education or health had the money to ire doctors or nurses to do this work, it would be well to place the examinations in their hands but they never have sufficient money, so this method might as well be frankly abandoned and the work given over to the teachers, who can do it sufficiently well and at no expense.

The state lecture bureau campaign has, on the whole, been successful, considering it was new and untried. Some states have failed to produce satisfactory results but the general results have been good, and sufficient to greatly encourage us for future work. As a matter of fact, the past season has been somewhat experimental, but it has laid the foundation for extensive work in the future. Most state managers have already booked lecture engagements for next fall—with medical societies, teachers' institutes, Chautauquas, etc., and the prospects are satisfactory and encouraging. At the end of this report I will tabulate the results of the lecture campaign—up to the time of handing in this report.

As to the future of this committee I beg to recommend:

1. The continuance of a weekly eye article for the Press Bulletin.

2. A few more conservation of vision pamphlets, and an increased circulation of the pamphlets.

3. The continuance of the lecturers, and the changing of the managers where the present managers have shown no real interest in the work.

4. The production of more stereopticon slides.

5. The encouragement and assistance of this committee in enabling the different states to form conservation of vision societies, committees or commissions, these organizations, however, to have no actual connection with this committee, as experience has seemed to show that it is better for the various state organizations to be independent in their nature.

6. The extension of the work of this committee so that it may become a potent power in the community. A central office should be established with the right kind of a secretary, who would supervise the work of vision conservation over the entire country. He should on call go to states requesting his assistance; his traveling expenses being paid for by those seeking his cooperation. He should have sufficient stenographic assistance and should accumulate all printed material on the subject of vision conservation. This office should work under this committee and should be recognized as a central bureau of assistance and information for all interested in this subject. Plans should here be made for model laws, the formation of societies and constitutions; the influencing of legislatures, boards of health, education, etc. A properly equipped and managed office of this kind would be *of enormous importance in conserving* the vision of the people of this country. It would only cost a few thousand dollars per annum to maintain. I trust some one will be found who will recognize its usefulness and will pay for it.

7. The distribution in all schools of crisply and plainly written leaflets concerning the care of eyes, ears, noses and throats. They should be taken home so that the parents can read them. They should be printed in various languages.

Perhaps even a better plan would be to have suggestions of this kind printed on the blank fly-leaf of all school-books. The expense of printing would be almost nothing and the benefits to be derived would be incalculable.

I wish to thank Dr. H. B. Favill, Dr. F. R. Green and the Council on Health and Public Instruction for the moral and financial assistance they have rendered our committee. I also wish to thank all those who have written for the Press Bulletin and the conservation of vision pamphlets. I also wish to thank all those who have assisted us in the work of the state lecture bureaus.

I herewith append a tabulated report of the state lecture bureau campaign and desire to say that a large part of the work done in Ohio has been done under the auspices of the Ohio Commission for the Blind.

No.	State and Manager	Number of Lectures	Number of Lecturers	Number of Cities	Estimated Size of Audiences
1.	Georgia, Dunbar Roy	10	10	10	1,975
2.	South Carolina, C. W. Kollock	10	8	6	950
3.	Alabama, S. Ledbetter	8	6	7	1,000
4.	Oregon, J. L. McCool	3	1	1	300
5.	North Carolina, C. W. Banner	7	4	4	2,000
6.	Kansas, R. S. Magee	7	5	6	1,050
7.	New Hampshire, E. Fritz	8	7	8	1,725
8.	Wyoming, G. L. Strader	1	1	1	100
9.	Tennessee, E. C. Ellett	4	4	4	850
10.	New York, F. P. Lewis	2	2	2	225
11.	Arkansas, H. Moulton	5	4	5	400
12.	Missouri, C. Loeb	15	12	8	2,[illegible]
13.	Utah, D. M. Lindsay	25	12	24	4,675
14.	Maine, J. A. Spalding	23	14	20	3,000
15.	North Dakota, J. H. Rindlaub	19	8	19	4,000
16.	Connecticut, G. H. Warner	2	1	2	850
17.	Washington, R. W. Perry	13	6	10	1,520
18.	Maryland, H. Woods	14	7	7	8,050
19.	Ohio, W. E. Bruner	59	39	59	14,300
20.	Kentucky, J. A. Stucky	35	2	35	10,350
21.	Delaware, J. A. Ellegood	3	2	3	675
22.	Idaho, R. L. Nourse	2	1	1	525
23.	Virginia, J. A. White	4	4	2	500
24.	Minnesota, F. C. Todd	3	3	3	500
25.	Iowa, E. R. Lewis	3	3	3	500
26.	Wisconsin, N. M. Black	1	1	1	250
27.	Washington, D. C., O. Wilkinson	2	1	2	200
28.	Michigan, W. R. Parker	4	1	3	1,430
29.	Indiana, A. E. Bulson, Jr.	45	20	25	5,000
30.	Nebraska, J. M. Patton	2	1	2	225
		339	190	283	69,425

It will thus be seen that thirty states have reported work; 339 lectures have been delivered by 190 lecturers; in 283 cities; to audiences aggregating 69,425.

When to this is added the hundreds of thousands of people who have been reached through the newspapers, by the distribution of the Press Bulletin, and the thousands of people who have been reached by the conservation of vision pamphlets, it will be seen that the work of this committee has not been in vain. I desire to also add that probably through the agency of the lectures, in the various states, school inspection of eyes, ears, noses and throats have been established in, at least, 200 cities.

Respectfully submitted,

Frank Allport, Chairman.

Report of Committee on Public Health Education Among Women

To the Council on Health and Public Instruction:

The function of this committee is to further public health education among women through the Educational committees of the state and county medical societies, and through the various women's clubs and organizations. At the beginning of the present year it was decided to settle on some one central line of work for the committee. There has never been a time in the history of this committee when such a central line has been so clearly defined by outside influences, or so distinctly within the province alone, of our committee, as at the beginning of my chairmanship. I refer to the baby health movement which has been the work on which we have been centralizing our efforts. While this has been the main line of action, we have urged two other lines of action: the first is the appointment of a woman member of the Committees on Health and Public Instruction of the state medical societies, and Public Health Education Committees of the county medical societies; second, to connect the work of the American Medical Association with the women's clubs of the country and thus draw together the existing forces so that mutual understanding and cooperation may be secured among them.

At the time of the meeting of the American Medical Association, at Minneapolis last June, the baby health movement had grown to such national importance that it seemed wise to bring together, at that meeting, representatives from the different centers of this interest, in order to secure the approval of the Association, and their official sanction of a score card. As it happens, the chairman of this committee belonged to the group of women who inaugurated the baby health movement in Iowa; the history of which can be found in the report of 1911 of the Committee on Public Health Education Among Women. According to the fixed policy of the American Medical Association, of working only through its various boards, councils and committees, the request of the representatives of the baby health movement was placed before the Council on Health and Public Instruction. After due consideration the Council gave the development of this work to the Committee on Public Health Education Among Women, authorizing the executive members of this committee to appoint, subject to the approval of the Council, a subcommittee to prepare a standard score card for the measuring and scoring of babies.

At the same time the executive members of the Central Committee were authorized to prepare such literature as would be necessary to further the baby health movement. The subcommittee on score cards, which was appointed last July, consists of Drs. Henry L. K. Shaw, chairman of Albany, N. Y.; Julius Parker Sedgwick of Minneapolis, Minn.; and Velura E. Powell of Red Oak, Iowa. At the October meeting the Council made the chairman of the Central Committee a member of the Score Card Committee, *ex officio,* and authorized the other members to select the fifth member of the committee. Dr. Godfrey R. Pisek of New York City was chosen for this place at the November meeting of the Score Card Committee in Washington, D. C., which was held in order that we might secure the advice and assistance of members prominent in the American Association for th Study and Prevention of Infant Mortality. That associatio had already received so many inquiries concerning scor cards that a committee had been appointed to formulate som plan of action. When it was learned that our Score Car Committee was to meet there, a joint meeting of their com mittee and ours was arranged to discuss the baby healt movement, and the compilation of a score card for babies The joint committee meeting was held on Nov. 15, 191 with the following members present: Drs. L. Emmett Hol Philip Van Ingen and Miss Ellen C. Babbitt of the America Association for the Study and Prevention of Infant Mortality; Mr. Merriman of the Children's Bureau; Dr. Henr L. K. Shaw, Dr. Godfrey R. Pisek, Dr. Velura E. Powell an Dr. Lenna L. Meanes of the American Medical Association We discussed the situation at length and received man valuable suggestions and assurance of hearty cooperation Shortly after my return I received a letter from Dr. L Emmett Holt in reference to the committee work in whic he says:

"As you know, I am greatly interested in the work whic you have undertaken and I believe it has in it great possibilities. The educational value of these conferences is boun to have an important influence on mothers in country districts and small towns who have not had the advantage which are offered to those in larger communities."

After a number of preliminary drafts of the score car were prepared by the Score Card Committee and submitte to prominent members of the American Medical Association as well as to members of the American Medical Associatio for the Study and Prevention of Infant Mortality, the fina draft was submitted to the Council on Feb. 24, 1914, for thei approval which it received. This draft has since been printed together with pamphlets number 4 and number 5, containin suggestions to organizations wishing to conduct baby healt conferences and a book list of fifteen approved authoritie on the care of the baby. Dr. L. Emmett Holt and Dr. Henr L. K. Shaw have prepared a clear, concise article on how t care for the baby; this is now in press, and will be known a Pamphlet No. 7. It will be distributed wherever contests o conferences are held. Having secured this necessary literature our efforts for the remainder of the year will be t secure the use of it through the state committees and women' organizations. Three thousand copies of the score card hav already been distributed throughout the United States withi the last thirty days. A corresponding number of duplicate is sent with each order of score cards. These are filled ou and returned to the American Medical Association to be filed for statistical purposes.

As soon as it was decided that there was to be a subcommittee to prepare model score cards, with explanatory pamphlets and bibliography, it became necessary to formulate some plan by which we could discriminate in their distribution. After a careful study of the situation, the plan of afternoon conferences to be held by the various women's clubs, mother's congress, child study clubs, etc., appealed to us, as a practical way of meeting this necessity. We put these into execution in several places early last fall and have not had occasion to be disappointed in the results.

Perhaps the description of one of these may be the clearest manner of presenting our plan. This particular conference which was held in October in a town of 3,000 people, was given under the auspices of the Child Study Club of that town. On the afternoon of the conference the largest church in town was filled from 2 o'clock until 5. In that county there are eleven physicians, eight of whom were present and responded to a three-minute speech on some phase of the child. Eight children were examined, ranging in age from 6 months to 3 years. Whenever possible the examiners called attention to interesting points as they measured and scored the babies. Literature on the care of the child was distributed and care taken that interest was aroused in these pamphlets so that the parents could, and would, read them intelligently. We measure our success in this one conference by the fact that a number of public health meetings in that

REPORT OF THI exceptionally well attended since To the Council on Hes, at this time, a movement on foot for In 1912 the Clinn in that town where babies can be meas- America at their days each month throughout the year. absolutely necesveness, efficiency and permanent benefit of of cancer andgs must necessarily depend, of course, on the of patientwhich the locality takes in them, and that interest campaige originated and fostered, largely through our own dailymmittees on Health and Public Instruction. It is here mihat the woman member of the committee in her intimate connection with clubs of her district can be of unquestionable value. To give us an additional aid in securing and furthering an interest in the conferences, the Council has granted us the privilege of preparing a list of speakers, to be added to their speaker's bureau, to lecture on some phase of the baby health movement throughout the different states. Some thirty women have signified their willingness to serve in this capacity. It is our desire to secure at least two speakers in each state. Our ultimate hope in connection with the conferences is that they will pave the way for creating permanent stations where babies can be examined from time to time, and also stimulate the interest of the parents to secure private measuring and scoring of their babies. If this hope is realized we feel that the baby health movement will be placed on such a solidly scientific basis that the present marvelous interest will continue permanently.

In order that the position of the American Medical Association may be clearly understood as to the measuring and scoring of babies, the Central Committee of the Committee on Public Health Education Among Women presented certain recommendations to the Council for their approval. In response the Council passed the following resolutions on Feb. 24, 1914:

That, if the awarding of any medals or prizes seems judicious in the baby health conferences, they shall be given to the babies showing the greatest improvement in health between the various examinations, rather than to the naturally healthy child who scores high at the first examination.

That, wherever possible, the establishment of permanent stations shall be urged, in order that we may have a recognized place for the distribution of our literature on the care of the baby; and for the examination of babies from time to time in order that a systematic, scientific knowledge of child welfare may be made of continued interest.

That the age limit for examination of babies at public contests, such as those held at state and country fairs, shall not be under 12 months, in order that unnecessary exposure of the child be avoided; but that the afternoon conferences and permanent stations shall not be confined to any age limit in their examinations, in order that they may have the child at the earliest age possible to correct, or check, defects by succeeding examinations.

Of the two other lines of action which our committee has followed, I wish to say of the first—the appointment of women on the Committees on Health and Public Instruction for the state medical societies, and Public Health Education Committees for the county medical societies—that shortly after my chairmanship began, I sent out letters to the different state medical societies, urging that such appointments be made. I have already received replies from over half of the states, expressing a most cordial desire to cooperate with us in every way possible. This support has been especially grateful to us in connection with the baby health conferences, as it is necessary that they should be held under competent supervision in order to have their value; otherwise not much is likely to be accomplished.

The third line of action, that of rendering to the women's clubs, wherever possible, the assistance of our Public Health Committee, has been one that has been of great interest. In reply to letters sent out to chairman of the Public Health Committees of the General Federation we have received replies from all but seven states, together with a list of the membership of their Public Health Committees and with the expressed desire on their part to cooperate with us in all public health meetings in their locality. We have placed

v interested

these names on our mailing list and have mailedre details. of the literature so far produced by our committd articles be gratifying to know that wherever we have mad It will function of our committee to the women's organizahis indi- have expressed the most hearty appreciation of t answer of the American Medical Association. To illustrate I sha quote from a letter received from one of the state chairmen.

"I feel that I cannot express my appreciation too strongly for the help the Public Health Committee is being to us i our public health work. Not the least part of that help li in the assurance which is given us of feeling that such a association as the American Medical Association stands reac to give us the efficient and correct assistance which we ha so often felt the need of, but did not know how to secur Please place the names of our Public Health Committee o your mailing list."

Our Medical Literature Committee has given us most efficient help in all these lines of action. Dr. Jane L. Berry, chairman of the Medical Literature Committee of last year, prepared a most excellent list of books on various health topics which we have had printed and which will be circulated as Pamphlet No. 6. The present chairman, Dr. Mary Sutton Macy, submitted to us four valuable lists of fifteen books each, which we have had printed and of which we have already distributed 9,000. We have sent them to 3,000 libraries, and samples of same to organizations wishing to put on baby health contests or conferences. On each slip is the following note: Librarians will be glad to cooperate by furnishing lists of these books for free distribution, and by securing the books for public use. These lists were on the following topics:

Health and Hygiene of Girls.
Health and Hygiene of Women.
Rationale of Social Hygiene.
Health and Hygiene of Babies.

As an illustration I include the last list in full on Health and Hygiene of Babies and Children.

Burbank—The Training of the Human Plant.
Chapin—Theory and Practice of Infant Feeding.
Coolidge—The Mothers' Manual.
Cotton—Care of Children.
Fitz—Problems of Babyhood; Building a Constitution, Forming a Character.
Forsyth—Children in Health and Disease.
Hall—Youth: Its Education, Regimen and Hygiene.
Hogan—How to Feed Children.
Key—The Century of the Child.
Montessori—The Montessori Method.
Oppenheim—The Development of the Child.
Saleeby—Parenthood and Race Culture.
Smart—Mystery of Life Series.
Swift—Mind in the Making.
Warner—The Nervous System of the Child.

May we ask that wherever public health meetings, baby health conferences and contests are held in your respective states, you ask your State and County Public Health Committee to be responsible for the medical supervision of the same; that, in those states where there is not a committee on health and public instruction you take steps to secure the same; that you request that one member of this committee be a woman, in order that she may work more intimately and efficiently through your various women's clubs and organizations, and that you make every effort to secure the cooperation of your medical societies and public health committees among the women's federations?

As a whole we have every reason to be grateful for the progress we have made so far this year; a progress only made possible through the hearty support of all through whom we directly work, or with whom we have had occasion to advise, and because of the impetus given to our committee by the splendid work accomplished by our predecessors, Drs. Everhard and Morton and their coworkers.

Respectfully submitted,
LENNA L. MEANES, Chairman.
MARTHA A. WELPTON, Secretary.

REPORT OF THE COMMITTEE ON CANCER

To the Council on Health and Public Instruction:

In 1912 the Clinical Congress of Surgeons of North America at their New York meeting realizing that it was absolutely necessary to educate the public as to the ravages of cancer and to point out to them that a large percentage of patients can be cured by early operation undertook a campaign for which they procured the cooperation of the daily press and weekly and monthly magazines. This committee was fortunate in enlisting the support of Samuel Hopkins Adams who wrote several comprehensive and lucid articles on the subject. The value of the publicity campaign soon became apparent. The knowledge that cancer in the beginning is a local process and not a blood disease, and that in the early stages the chances of its complete removal are good, induced many patients, especially those suffering from breast, lip or uterine cancer, to consult a physician early enough to ensure the best results.

The first annual report of the Cancer Campaign Committee of the Congress of Surgeons left absolutely no doubt as to the great good that can be accomplished by this method of enlightening the public on what can be done by early cancer operations.

It was not long before the laymen commenced to take an interest in the subject and in May 1913 the American Society for the Control of Cancer was launched, the membership including well-known laymen and representative medical men from all parts of the United States. It is expected that this society will be the clearing house for the dissemination of the newer knowledge concerning cancer.

The Council on Health and Public Instruction of the American Medical Association had for some time realized the necessity of having a committee on cancer. When the question came up for discussion Dr. Frederick R. Green, the Secretary of the Council, voiced the general sentiment when he said that the number of philanthropic societies in the United States was already too great and that they were overlapping one another, and hence a loss in potential energy was resulting. Following this line of reasoning the council in the appointment of its cancer committee selected men who were already members of the Cancer Campaign Committee of the Clinical Congress of Surgeons, and also of the American Society for the Control of Cancer. The Council Cancer Committee, consisting of Drs. Joseph C. Bloodgood, C. J. Miller, F. F. Simpson, H. C. Taylor and Thomas S. Cullen, appointed in November, 1913, has thus far limited its individual activities to securing a series of authoritative and popular articles on the subject of cancer. These are to be printed by the Association and will be distributed to any one desiring information relative to cancer. Articles on the following subjects are being prepared by competent authorities.

Cancer of the Skin.
Cancer of the Breast.
Cancer of the Stomach.
Cancer of the Uterus.
Cancer of the Genito-Urinary Tract.
Malignant Diseases of the Bone.

To these will shortly be added an article on cancer of the rectum and others dealing with the rarer varieties of malignant processes.

To any one interested in the betterment of the public health and in the subject of cancer we would urge that he first get a bird's eye view of the whole subject from Samuel Hopkins Adams, "The Health Master," a book that should be read from cover to cover not only by every physician, but by every man and woman who understands the English language—and that he then write Dr. Frederick R. Green, Secretary of the Council on Health and Public Instruction of the A. M. A., 535 North Dearborn Street, Chicago, asking for literature on the particular variety of cancer about which he needs special information at any given time.

Only a few years ago the public knew very little about appendicitis. Now the patient and his friends need not be told that an operation is necessary; they know it just as soon as appendicitis is diagnosed. They are already interested in the subject of cancer and are clamoring for more details. Every physician should read these carefully prepared articles published by the American Medical Association. It will enable him to do a lot of valuable missionary work in his individual community and will enable him to promptly answer any questions that may be asked him relative to cancer.

The number of cancer patients coming early for operation is already rapidly increasing. There is absolutely no reason why every man and woman in the land should not, within the next five years, have a clear knowledge of the fact that early cancer can be cured by the knife and furthermore that any suspicious symptoms should at once be reported to the family physician. Your committee asks the hearty cooperation of every member, without exception, of the medical profession in this important work.

Respectfully submitted,
THOMAS S. CULLEN, Chairman.

REPORT OF THE COMMITTEE TO CONFER WITH THE NATIONAL EDUCATIONAL ASSOCIATION

To the Council on Health and Public Instruction:

Your committee appointed by the Council on Health and Public Instruction to confer with the committee selected by the Council of the National Educational Association to improve instruction in sanitation, hygiene, physiology and kindred sciences in the rural public school as well as the environment of the rural public school, begs to submit the following report:

At the meeting of the committee at Salt Lake City during the fifty-first annual convention of the National Educational Association, July 5-11, 1913, they carried out the suggestions made at the St. Louis meeting (February, 1912). Your committee had arranged with Dr. W. B. Ewing, secretary of the Utah State Medical Association, to enlist the support of the Utah State Medical Association, and especially the physicians of Salt Lake City. The medical fraternity of the city of Salt Lake and the state of Utah responded most heartily, as indicated by the following letter from Dr. Ewing:

> During the recent meeting of the National Educational Associati at your suggestion, I was able to arouse some interest among the profession in this city in the various papers and discussions on health topics. As nearly as could be the various departments were apportioned and various medical men asked to attend and take part in the discussions or do anything else that would show their interest in the work, and desire to help in so worthy a cause. Among those who attended may be mentioned Drs. Hosmer, Bascom, Carter, Kahn, Beatty, Snow, Irvine, Gowens, Tyndale and Ashley. Several non-medical attendants were present, such as visiting nurses, inspectors of City Board of Health, librarians, etc. Many of us, myself among the number, regret that many of the meetings were at an hour when some could not be present on account of office work.
>
> I am very glad to see the determined stand the American Medical Association has taken in this work and feel that ultimately it will be given such an impetus that it may then be left in the hands of the National Educational Association and we can take up some other line of work.

Your committee replied:

> I beg to acknowledge receipt of your letter of the 11th inst., and personally as well as officially wish to thank you and all the members of your staff most kindly for the efforts in this matter. I shall report this to Secretary Green and your letter will form a part of my annual report to the American Medical Association. I feel that much was accomplished in Salt Lake and with a little effort on the part of the medical profession that we shall soon have the whole matter launched sufficiently for it to continue without special effort of the National Educational Association. Later we shall turn our attention to other matters of equal importance. Will you kindly extend to all the members of your staff my deepest thanks for their valuable aid.

Many meetings were held by the committees while in Salt Lake. Lectures and talks were given by the following: Drs. Favill, Wood, Ewing and Corwin; Commissioner Claxton, Messrs. Winship and Shawan, and others at the meeting of the Council and at various sections during the convention.

Photographs of rural schoolhouses, interior and exterior views, of outbuildings and of grounds, were exhibited, many illustrating the sad need of a more careful sanitary inspection, others showing indifference and some proving positive ignorance.

The following needs were especially dwelt on by the committees: better architectural and sanitary standa Trus

court and either taxed as part of the cost of the case or assessed against the party requesting the testimony.

It is believed that the distinction outlined will cure many of the serious objections to the present system. It will do away with the too frequent summoning of experts when there is no need of opinion testimony. It will get an expert in court with at least some show of fairness. It cannot be said that he was summoned by the party who employed him.

Your committee have discussed these propositions before joint meetings of lawyers and physicians. So far no valid objection has been advanced against the proposed changes. At the next meeting of the Council on Health and Public Instruction the committee will present a draft for a bill that will with few alterations meet individual situations in the several states.

Nothing in the statutory changes presents the adoption of the Leeds plan of having the experts in a given case consult in arriving at an opinion. The Monroe County plan, by which men especially qualified in certain fields, are named by the local medical society supplements the statutory changes here suggested.

Respectfully submitted,
HAROLD N. MOYER, Chairman.

Dr. G. Lane Taneyhill, Maryland, Chairman, presented the report of the Committee on Memorial to the Medical Officers Who Lost Their Lives in the Civil War, as follows:

Report of the Committee on Memorial to the Medical Officers Who Lost Their Lives in the Civil War

To the Members of the House of Delegates of the American Medical Association:

The other members of this committee beg leave, in sincerity, to pay a tribute to the memory of their esteemed chairman, Dr. S. Weir Mitchell, who at the age of 84 passed peacefully to rest early Sabbath morning, Jan. 4, 1914. As was said of Goldsmith, "He was at once physician, poet and natural philosopher." It was this popular writer, lecturer and savant who, in reading a paper before the Medical and Chirurgical Faculty of Maryland, where many old surgeons were present, a few years since, remarked that the surgeons of both armies who lost their lives in the Civil War deserved a monument for their noble services in the performance of a duty to a common humanity. The idea was at once taken hold of by a member of this committee, who submitted propositions to the House of Delegates of the American Medical Association which were heartily endorsed and subsequently pushed forward. But through the death of our chairman and other unexpected incidents, fate seems against the accomplishment of the desired result under the present directorate.

During part of the past year the enforced absence of one of our members in Africa, and since his return his arduous duties as Surgeon-General of the United States Army, have prevented any active service by him on the committee. The chairmanship has been declined by another member on account of other burdensome work already imposed on him.

Considering the foregoing and the inability at this late date of the committee to secure a willing and satisfactory surgeon who served in the Civil War and is at present a member of the American Medical Association to fill the vacancy in the Central Committee of five, and the difficulty of carrying out the original plan of a General Committee of one from each state has led your Central Committee reluctantly to ask the House to receive the foregoing explanation as their final report and to discharge this special committee from further consideration of the subject.

Your committee hopes that the meritoriousness of the project will, some time in the future, be impressed on younger hearts, and that they will be able to prosecute it to a final consummation.

Respectfully submitted,
G. LANE TANEYHILL, Secretary,
WILLIAM C. GORGAS,
W. W. KEEN,
G. B. THORTON.

Dr. Arthur T. McCormack, Kentucky, moved that the report be spread on the minutes of the House of Delegates; that the thanks of the House be extended to the members of the committee for their services, and that the committee be discharged. Motion seconded and carried.

Dr. A. L. Brittin, Ilinois, Secretary, presented the report of the Committee to Consider Mode of Commemoration of the Completion of the Panama Canal, which was referred to the Board of Trustees.

Report of the Committee to Consider Mode of Commemoration of the Completion of the Panama Canal

To the Members of the House of Delegates of the American Medical Association:

The committee appointed by the American Medical Association to consider the mode of commemoration of the completion of the Panama Canal met in joint session with a committee of the Trustees of the American Medical Association at the headquarters of the Association, 535 North Dearborn Street, Chicago, Feb. 26, 1914, at 10 o'clock in the morning. Present at this meeting were J. H. White, U. S. Public Health Service, chairman, at whose call the meeting was held; Jefferson R. Kean, U. S. Army; J. Leaming Wiggins, East St. Louis, Ill., and Albert L. Brittin, Athens, Ill.; the Committee; and from the Board of Trustees, F. J. Lutz, St. Louis, and Oscar Dowling, Shreveport, La. J. H. White was elected chairman, and Albert L. Brittin was chosen secretary of the joint committee.

After full discussion of the subject under consideration, the joint committee submitted the following report and recommendation to be presented to the House of Delegates of the American Medical Association at its next meeting, to be held at Atlantic City, June, 1914.

The joint committee recommends that a monument be erected, to be financed by the American Medical Association, possibly with government aid, located on the Canal Zone at a point to be chosen by the Secretary of War. This monument is to be commemorative of the contributions of the American medical profession to preventive medicine and sanitary science. Designs of the monument submitted by artists should be a figure symbolic of the triumph of science over disease. These designs are to be submitted to the chairman of the joint committee. The names of those men whose work was essential to the attainment of the sanitary condition, which made possible the construction of the Canal, are to be inscribed on the base. These names are to be selected later by the joint committee. This monument is to be dedicated by the American Medical Association on the Canal Zone, not more than two weeks before the meeting of the American Medical Association, presumably to be held in San Francisco, in 1915.

The joint committee further recommends that the House of Delegates of the American Medical Association, at this meeting, request the Board of Trustees to appropriate a sum of money, not less than $30,000, for the monument. It was further resolved that it is the sense of this committee that the Panama-Pacific exposition management be requested to set aside a day during the exposition, to be designated as Honor Day, in recognition of the services of the men, living or dead, who by their contribution to sanitation and preventive medicine have made feasible the construction of the Canal, and that on that day a general session of the American Medical Association be held, which shall be open to the public.

It was unanimously agreed by the joint committee that Albert L. Brittin, secretary of the joint committee, shall present this communication to the House of Delegates at the proper time during the next session of the Association.

Respectfully submitted,
JOSEPH H. WHITE, M.D., Chairman,
ALBERT L. BRITTIN, M.D., Secretary,
J. L. WIGGINS, M.D., of Committee, and
OSCAR DOWLING,
W. W. GRANT,
FRANK J. LUTZ,
of the Board of Trus

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It was moved that the reports of the Committee on Scientific Research and the Committee to Advise with the British Medical Association Regarding a Joint Meeting with the American Medical Association be received as printed in the Handbook and referred to the Board of Trustees.

Motion seconded and carried.

The House of Delegates having completed the docket for the day, President Witherspoon said:

"It now becomes my duty, as your retiring president, to close this meeting and to declare the House of Delegates adjourned. It is with a great deal of pleasure that I have been with you, and with regret I leave you." (Applause.)

The House of Delegates then adjourned until 2 p. m., Tuesday, June 23.

Third Meeting—Tuesday Afternoon, June 23

The House of Delegates met and was called to order at 2 p. m. by the President, Dr. *Victor C. Vaughan, Ann Arbor.*

On taking the chair President Vaughan said:

"I consider it the highest honor of my life to preside over he House of Delegates of the American Medical Association. ow the temper, the intellectuality and the motives of the bers of this House, and I hope to give you my best serv- nd that what we may do will result in good for the vard movement of our profession. (Applause.)

The Secretary announced a quorum present.

The minutes of the previous meeting were read and approved.

Dr. D. Chester Brown, Connecticut, Chairman, presented a supplementary report from the Committee on Credentials.

A supplementary report from the Council on Health and Public Instruction was made by Dr. Frederick R. Green, Secretary of the Council, calling attention to a report on rural school health problems prepared by a joint committee of the National Educational Association and the American Medical Association.

Dr. Green then placed copies of this report in the hands of the members of the House.

Dr. W. T. Councilman, Chairman of the Board of Trustees, reported for the Board as follows:

Supplementary Report of Board of Trustees

The Board of Trustees has received a communication from the Medico-Legal Protective Association of New York, and a representative of that association, Mr. William L. Brown, is present and would like to present matters connected with this association to the House of Delegates if it is the desire of the House to hear him.

The Board of Trustees refers this matter to the House of Delegates without comment.

Mr. Brown has suggested to the Board that it might be desirable to have Mr. W. J. Burns present the matter to the House.

There is another matter which came before the Board of Trustees, which will be presented by Dr. M. L. Harris, Secretary of the Board.

Dr. *James W. Fleming, New York,* moved that Mr. Brown be invited to address the House, and that his time be limited to five minutes.

The motion was seconded and carried.

Dr. Harris, Secretary, reported further for the Board:

The Board of Trustees has received a communication from one of the Fellows, requesting that the Association be custodian of the patent rights of an instrument which he desires to have patented in order that the instrument may be protected both with regard to the form of the instrument and the standard of material and work in its manufacture. The patentee desires no remuneration whatever from the use or sale of the device, but wishes to have the instrument manufactured at the lowest possible cost to the members of the profession consistent with the production of a reliable instrument.

The Board of Trustees has considered this matter and approves of it. The Board believes it is desirable for the Association to provide some means by which it can assume and censor the manufacture and marketing of such instruments.

The Board of Trustees refers this matter to the House of Delegates and recommends that it be received and referred to the Judicial Council, and that, if possible, the Judicial Council report at this meeting as to the practicability of accepting such patent rights.

Dr. Arthur T. McCormack, Kentucky, moved that the matter be referred to the Judicial Council with the request that the Council report during the session, if possible.

Motion seconded and carried.

Dr. H. Bert Ellis, California, Chairman, presented the report of the *Reference Committee on Medical Education,* as follows:

Report of Reference Committee on Medical Education

Your Committee, to which was referred the report of the Council on Medical Education, report as follows:

It is recommended that the House of Delegates endorse the report as a whole and particularly Sections III and IV on page 132 in which state licensing boards are urged to make a hospital internship compulsory on those who are to obtain the license to practice medicine; this requirement to apply to all students matriculating in medical colleges on and after Jan. 1, 1915; it is further recommended that the Council urge the medical colleges to approve of this requirement and request its adoption by the licensing boards of their respective states.

It is recommended that the House of Delegates reiterate its action taken two years ago—that the courses in physics, chemistry and biology included in the preliminary science year must be of college grade; that this preliminary science year must be preceded by four years of work of high school grade; and that "high-school" courses as ordinarily understood be not accepted in these subjects in lieu of college courses.

The action of the Council in seeking the advice of experienced clinical teachers in regard to the needed reorganization of clinical teaching is approved.

The changes in the ratings of medical colleges, made by the Council on Medical Education during the past year, are approved.

The attitude of the Council toward certificates issued by postgraduate medical schools is endorsed, and the Committee recommends that the House of Delegates instruct the Council to make such recommendations as will properly safeguard the issuing of those certificates.

In addition, your Committee recommends that the Council be instructed to grant no rating higher than Class C, hereafter, to any medical college operated as a stock corporation in the interests of the stockholders.

Your Committee also recommends that the Council be instructed to urge all medical colleges to adopt the nomenclature of the Pharmacopeia of 1910 and to use the metric system in their teaching.

The Committee is impressed with the remarkable improvements brought about in medical education during the past ten years as summarized in the report, and wishes to congratulate the Council on the progress made.

Respectfully submitted,

F. B. Lund,
Adolph Koenig,
C. D. Selby,
W. H. Sanders,
H. Bert Ellis, Chairman.

On motion of Dr. J. W. Andrews, Minnesota, which was duly seconded, the report was taken up seriatim.

On separate motions, which were duly seconded, each of the several sections was adopted.

Dr. A. R. Mitchell, Nebraska, moved that the report be adopted as a whole.

Seconded and carried.

The report of the Reference Committee on Amendments to the Constitution and By-Laws was called for.

The Chairman, Dr. W. A. Jayne, asked that the report be passed until after the report of the Reference Committee on Reports of Officers.

Report of Reference Committee on Reports of Officers

Dr. Thomas D. Davis, Pennsylvania, Chairman, read the report of the Reference Committee on Reports of Officers, as follows:

We recommend that the item concerning a new Section on Gastro-Enterology and Proctology be referred to the Committee on Sections and Section Work.

That the resolution from the secretaries of sections be referred to the Committee on Sections and Section Work.

That the resolution from the Medical Society of the State of New York and the communications from the New York Component Society be referred to the Committee on Legislation.

On motion of Dr. G. Lane Taneyhill, Maryland, duly seconded, the latter was spread on the minutes of the House.

That the amendment to the By-Laws be referred to the Committee on Constitution and By-Laws.

That the Principles of Medical Ethics be referred to the Committee on Constitution and By-Laws.

That Affiliate Fellowship for aged Fellows be referred to the Committee on Constitution and By-Laws.

That the coordinating branches of the organization be referred to the Committee on Constitution and By-Laws.

That the item concerning invited guests be referred to the Committee on Constitution and By-Laws.

On motion, duly seconded, the various items were referred to the committee named.

Dr. Henry B. Favill, Illinois, read the following letter, addressed to the Association:

To the Members of the American Medical Association: The Social Service Commission of the Philadelphia Conference of the Methodist Episcopal Church in session this day in the city of Philadelphia do hereby express our sympathy with and hearty commendation of the high ideals of public health and morals presented by the members of the American Medical Association in the churches of this city on Sunday, June 21. Creating in the Christian conscience a responsibility for the health and physical condition of all humanity, and especially for those least able to protect themselves is certainly a movement in the spirit of Christian brotherhood. We believe that such a gospel truly hastens the Kingdom and is a true ministry to mankind.

Rev. John Watchorn, Secretary.

On motion, which was duly seconded, this communication was received and ordered spread on the minutes.

Report of Reference Committee on Amendments to the Constitution and By-Laws

Dr. W. A. Jayne, Colorado, Chairman, read the report of the Reference Committee on Amendments to the Constitution and By-Laws, as follows:

Your Committee respectfully recommends that the following changes be made in the Constitution and By-Laws of this Association:

That the amendment proposed by the Reference Committee on Amendments to the Constitution and By-Laws, at the 1913 Session, and held over under the Constitution, be adopted, by striking out the words "scientific session" and substituting therefor the words "scientific assembly," in Article III.

That the By-Laws be amended as follows:

That the second paragraph of Section 4, Chapter IV, be amended to read:

> Nominations for Affiliate Fellowship shall be made by the Council of the constituent association within the jurisdiction of which he is resident, and those for Honorary Membership by the sections, and must be submitted to the House of Delegates not later than the second day of the Annual Assembly.

That the second paragraph of Section 4, Chapter VII, be amended to read:

> The judicial power of the Association shall be vested in the Judicial Council, whose decision *shall be final*. This power shall extend to and include (1) all controversies arising under this Constitution and By-Laws to which the American Medical Association is a party; and (2) controversies (*a*) between two or more recognized constituent associations, and (*b*) between the constituent association and the member (or members) of another constituent association (or other associations), or component societies thereof; (*c*) between members of different constituent associations. In all these cases the Judicial Council shall have original jurisdiction.

Strike out No. 3—reading "In all cases," etc.—and substitute the following:

> In all cases which arise between a constituent association and one of its component societies; between component societies of the same constituent association; between a member of a constituent association and the component society to which said member belongs; or between members of different component societies of the same constituent association, the Judicial Council of the American Medical Association shall have appellate jurisdiction.
>
> The constituent associations herein referred to are those defined in Article 4 of the Constitution, and the component societies are the county or district medical societies which unite to support and maintain the several constituent associations.
>
> The Judicial Council may, at its discretion, investigate general professional conditions, and all matters pertaining to the relations of physicians to one another and to the public, and shall make such recommendation to the House of Delegates and the constituent associations as it deems necessary.

That in the thirteenth line of Section 8, Chapter VII, the words "and county" be stricken out.

That to Clause 6, Section 11, Chapter VII, there shall be added (in parentheses):

> The members of the Judicial Council shall be members, *ex officio*, of this Committee.

That in the first line of third paragraph of Section 4, Chapter VIII, the word "Affiliate" be inserted, so that it shall read:

> "There shall be Affiliate, Associate, and Honorary Fellows, who shall be elected," etc.

That to the present Section 5 (Tenure of Fellowship), Chapter VIII, there be added the following paragraph:

> Fellowship shall be further conditioned on a Fellow conducting himself in accordance with this Constitution and By-Laws, and Principles of Medical Ethics of this Association.

That a section be added to Chapter VIII, and numbered Section 5, and read as follows:

> Affiliate Fellowship.—A Fellow who has been a Fellow for a continuous term of fifteen (15) years, who is not less than sixty-five (65) years of age, and who is an honorary member of his component society and of his constituent association, or is connected with these organizations in an equivalent manner whereby he is relieved from the payment of dues or fees, on request of the Council of his constituent association may be made an Affiliate Fellow by a majority vote of the House of Delegates of this Association. Affiliate Fellows shall be privileged to participate in the Scientific Assembly of the Association; they shall not be required to pay fellowship dues and shall not receive The Journal of the American Medical Association except by personal subscription. Affiliate Fellowship shall be conditioned upon such an Affiliate Fellow continuing the relationship with his constituent association herein defined.

That the present Section 10, Chapter VIII, be numbered Section 8, and read as follows:

> Sec. 8. Invited Guests.—Scientists resident in the United States who are not engaged in the practice of medicine, and eminent physicians and scientists from foreign countries, may be invited by the general officers or by the officers of a section, to attend an annual assembly and participate in the scientific work and social functions. They shall be designated as invited guests.

That the sections in Chapter VIII be renumbered as follows:

Sec. 5. Affiliate Fellowship.
Sec. 6. Associate Fellowship.
Sec. 7. Honorary Fellowship.
Sec. 8. Invited Guests.
Sec. 9. Tenure of Fellowship.
Sec. 10. Delinquency.
Sec. 11. Fellowship Restored.

That there be inserted in the first line of Chapter IX the word "Affiliate," so that it shall read:

> "None but Fellows, Affiliate, Associate, and Honorary Fellows, and Invited Guests," etc.

That in line 4, Section 7, Chapter IX, the word "Affiliate" shall be inserted, and the word "and" stricken out, so that it shall read:

> "Fellows, Affiliate, Associate, and Honorary Fellows, and Invited Guests," etc.

That in Section 13, Chapter XI, the second sentence be stricken out.

The Committee recommends that the Secretary be authorized to substitute the word "Assembly" for "Session" in these By-Laws wherever applicable.

The Committee further recommends that wherever in the By-Laws the term "annual dues" appears, that the words "annual Fellowship dues" shall be substituted.

The Committee likewise recommends that in the Constitution the word "Assembly" be substituted for the word "Session" wherever it may appear; and that under the rules it be held over for adoption at the next Annual Session of the House of Delegates in 1915.

Respectfully submitted,

W. A. Jayne, *Chairman*,
Floyd M. Crandall,
Charles Richard,
Perry Bromberg.

It was moved and seconded that the report be taken up seriatim. Carried.

On separate motions, which were duly seconded, each of the several sections was adopted, with the exception of the third paragraph of the proposed revision of Section 4, Chapter VII, defining the appellate jurisdiction of the Judicial Council, which was laid on the table until the next annual session, and the Secretary was instructed to refer this paragraph to constituent associations for their consideration before final action is taken by the House of Delegates at the 1915 Session.

On motion, which was duly seconded, the report of the committee was adopted as a whole as amended.

At this juncture, Mr. William L. Brown was accorded the privilege of the floor, and spoke of the great increase in malpractice suits in recent years, and stated that, according to insurance statistics, very many of these suits were in the nature of blackmail, and were utterly unwarranted and malicious. It occurred to him that the House of Delegates would like to hear from Mr. William J. Burns on this subject, who had handled many cases of malpractice suits.

Dr. Arthur T. McCormack, Kentucky, moved that this matter be referred to the Judicial Council with power.

Seconded and carried.

Dr. William L. Noble, Illinois, stated that at the last meeting of the House of Delegates of the Illinois State Medical Society, the following resolution was adopted with but five dissenting votes and the Illinois delegates were instructed to present the same to the House of Delegates of the American Medical Association:

> *Resolved*, By the House of Delegates of the Illinois State Medical Society, that we deplore the organization of the "American College of Surgeons" as violating the fundamental democratic principles on which the American Medical Association is based; be it further
>
> *Resolved*, That our delegates to the American Medical Association be instructed to submit this resolution to the House of Delegates of the American Medical Association, and to use all honorable means to secure its adoption.

Dr. J. M. Baldy, Pennsylvania, moved that the resolution be tabled.

Seconded and carried.

Dr. William L. Noble, Illinois, submitted the following resolution:

> Whereas, There has been chartered in the State of Illinois an organization known as the American College of Surgeons, whose avowed object is to elevate the standard of surgery and to indicate to the public and the profession that the surgeon possessing such a fellowship is especially qualified to practice surgery, and
>
> Whereas, The American Medical Association has never taken any action which would indicate to the public and profession those members of its own organization who are especially qualified to practice surgery, and
>
> Whereas, At this time the public has no other means of knowing who are competent to practice surgery, except as it is informed by the American College of Surgery, therefore be it
>
> *Resolved*, By the House of Delegates of the American Medical Association that we heartily commend and endorse the organization of the American College of Surgeons, and that we recognize it as filling a long-felt want, which the American Medical Association has hitherto failed to meet.

On motion, which was duly seconded, the resolution was laid on the table.

Dr. Fred Lund, Delegate from the Section on Surgery, presented a communication from that Section, advising the use that the By-Laws were amended in 1912, changing the title of the "Section on Obstetrics and Gynecology" to the Section on "Obstetrics, Gynecology and Abdominal Surgery," without the knowledge of the Section on Surgery, and that now the Section on Surgery requests that the By-Laws be amended by striking out the words "and Abdominal Surgery" and inserting the word "and" between the words "Obstetrics, Gynecology," so that the title of the Section shall read as it formerly read, "Obstetrics and Gynecology."

Dr. C. E. Cantrell, Texas, moved that the amendment be referred to the Reference Committee on Amendments to the Constitution and By-Laws.

Seconded and carried.

Dr. Henry F. Lewis, Illinois, offered the following resolution:

> Whereas, The Appellate Court of Illinois rendered a decision which casts doubt on the legality of the corporate acts of the American Medical Association during recent years, and the text of the decision, vastly important to the members of the Association, has never been published in The Journal of the American Medical Association, and the Trustees have never satisfactorily explained the situation to the membership.
>
> *Resolved*, That this House of Delegates believes that the questions involved are important enough to be made known to every member and Fellow of the American Medical Association; that the full text of the decision of the Appellate Court should be published in The Journal of the American Medical Association; that the Trustees should hasten, by all means in their power, a final decision by the Illinois Supreme Court.

Dr. E. J. Goodwin, Missouri, moved that the resolution be referred to the Reference Committee on Reports of Officers.

Seconded and carried.

Dr. Joseph E. Willets, Pittsburgh, presented the following in the Section on Ophthalmology, which was, by action of the Section, transmitted to the House of Delegates by the delegate of the section, Dr. Melville Black, Colorado.

> The work of the Commission on Medical Expert Testimony, appointed by the Pennsylvania State Medical Society, has proved conclusively that the ethical members of both the legal and the medical professions are keenly alive to the necessity of some far-reaching action to preserve their honor and integrity, which are assailed by unprincipled attorneys in courts of justice every day, in every state.
>
> The medical expert is handled on the witness-stand to-day in the identical way he was one hundred years ago, when men practiced medicine unlicensed and without diplomas. The obsolete court methods of to-day do not in any way conform to the present-day standard of the scientists, who were evolved from empirics; who stand, to-day, surrounded by the marvelous, almost miraculous, discoveries in medicine, and who deserve a generous gratitude for services nobly performed, instead of character assasination.
>
> Each state medical society has its Committee on Public Policy and Legislation. The jurisdiction of this committee covers such subjects as medical expert testimony, conservation of vision, vaccination, vivisection, reform law, and new legislation, any one of which is a task in itself. In the aggregate the labors demanded become a physical impossibility for successful accomplishment—especially with the limited numbers constituting the Committee.
>
> Whereas, It seems absolutely necessary to have concerted action by a wide organization of a national medical body, to correct the abuses which now exist under the present lax laws governing medical expert testimony; therefore, be it
>
> *Resolved*, That the American Medical Association do hereby create a commission on medical expert testimony, to be known as the "Interstate Commission on Medical Expert Testimony," empowered to confer with the legal profession.
>
> That the commission be composed of a national chairman and a representative medical man for each state.
>
> That the policy of agitation of the subject by the Pennsylvania State Commission be adopted, wherein each member of this commission shall arrange for symposiums to be held in each county medical society of his state—members of the county bar association to be invited.
>
> That the subjects of the "formulation of a stricter definition of medical expert testimony;" the "abolition of the hypothetical question;" and the "right of the trial judge to appoint, on his own initiative, an expert to act as an assessor or to suggest to him questions which might clarify conflicting testimony," be given special consideration.
>
> That each member of the commission be furnished with the Association's stationery.
>
> That an appropriation of $1,000 be made to cover the expenses of the work, as before outlined.
>
> That the results of its work be embodied in a report, to be presented to this body at the next meeting.
>
> That its findings be then referred to the Committee on Public Legislation and the Commission discharged."

Referred to the Reference Committee on Legislation and Political Action.

Dr. J. J. McGovern, Wisconsin, presented the following, which was referred to the Reference Committee on Legislation and Political Action:

WHEREAS, The report of the Committee on Expert Testimony indicates that a solution of that difficult problem has not been found, the report indicating clearly that no improvement is to be expected along the lines of state or national legislation; and,

WHEREAS, It is the duty of the medical profession to reduce, as far as possible, the number of members who are dishonest in their testimony before courts and juries; therefore, be it

Resolved, That the Committee on Expert Testimony be made a standing committee and that a similar committee be created in each affiliating state and county society. The duty of the various committees shall be to report to their respective societies, annually, and the committee of the county societies may report at any meeting of their respective county societies, on all testimony given by the medical experts before a court or jury in their respective districts with such recommendations as they see fit to make.

Proposal Concerning Preparation of Scientific Program

Dr. J. Shelton Horsley, Virginia, presented the following, which was referred to the Reference Committee on Amendments to the Constitution and By-Laws:

The sections of the American Medical Association have two distinct functions. The first is to produce scientific work and the second is to encourage and develop young men. The young man in medicine, surgery or any of the specialties should look forward to the American Medical Association as affording him an opportunity to place his work before the medical profession if it has any value. He cannot become a member of any special society until he has acquired some reputation; and unless he can feel that any work of merit by him will be afforded an opportunity to be placed before the medical profession, he really has no chance. As many of the sections are now conducted, it seems that only the most eminent are permitted to read papers, and the second function of the American Medical Association of encouraging and developing young men is neglected. The habit of filling the program with famous names does not invariably give the best work. In order to overcome these objections, I offer as a part of the By-Laws under Chapter XI the following:

SECTION 15. MANNER OF PREPARING PROGRAM OF THE SECTIONS.—The Chairman and Secretary of the Section may fill not more than two-thirds of the program of their Section by special invitation. The rest of the program must be filled from articles submitted to the Chairman or Secretary of any section, at least three months before the date of meeting. The Chairman and Secretary shall select from the articles submitted those that appear most meritorious and shall have full power to decide on the value of any article submitted.

Dr. M. L. Graves, Texas, presented the following preambles and resolution at the request of Dr. Albert Woldert, Alternate Delegate:

WHEREAS, The American Medical Association has for several consecutive years appointed a "Committee to Consider the Mode of Commemoration of The Completion of The Panama Canal," and

WHEREAS, At a joint meeting of the Board of Trustees and the Committee of the American Medical Association to Consider the Mode of Commemoration of The Completion of The Panama Canal, held in February, 1914, a resolution was adopted to have the House of Delegates request the Board of Trustees to appropriate the sum of Thirty Thousand Dollars ($30,000) for a monument to be erected to those physicians whose scientific work and discoveries subsequently made possible and practicable the building and completion of the Panama Canal, and

WHEREAS, Dr. Ronald Ross, Surgeon-Major in the British Army, was first to prove that insects (mosquitoes) are capable of carrying and transmitting disease such as malarial fever, this discovery being first made by him, Aug. 20, 1897, and about three years previous to the appointment of the American Commission to investigate the question of the transmission of yellow fever in Cuba, the members of which commission were first to prove that yellow fever is also transmitted by mosquitoes, and

WHEREAS, Science recognizes no nationality in the bestowal of deserved honors for discoveries made, and in honoring Ross, we do honor ourselves, therefore be it

Resolved, That the House of Delegates of this Association hereby request and instruct the proper committee in charge to insert and include the name of Ross among others to be commemorated by the erection of a monument in Panama under the auspices of the American Medical Association.

On motion of Dr. Arthur T. McCormack, Kentucky, which was duly seconded, the resolution was referred to the Board of Trustees.

Dr. S. W. S. Toms, New York, presented a request for the formation of a new Section on Hydrotherapy, which was referred to the Reference Committee on Sections and Section Work.

On motion, which was duly seconded, the House of Delegates adjourned until 2 p. m., Wednesday.

Fourth Meeting—Wednesday, June 24

The House of Delegates met at 2:15 p. m. and was called to order by the President.

The Secretary announced a quorum present.

The minutes of the previous meeting were read and approved.

Dr. D. Chester Brown, Connecticut, Chairman, presented a supplementary report from the Committee on Credentials.

A telegram was read from Henry C. Lovis, president of the National Association of Manufacturers of Medicinal Products, now in session at New York, extending greetings and best wishes.

Report of the Reference Committee on Amendments to the Constitution and By-Laws

Dr. W. A. Jayne, Colorado, Chairman, presented the report of the Reference Committee on Amendments to the Constitution and By-Laws, as follows:

At the meeting of the House of Delegates, held June 23, 1914, the delegate from the Section on Surgery presented a resolution asking that the By-Laws be amended so that in the third title appearing in Section 1, Chapter XI, the words "and Abdominal Surgery" shall be stricken out, making the title of the section "Obstetrics and Gynecology."

Your Committee recommends that Section 1, Chapter XI, of the By-Laws be amended by adding after the word "Surgery" in the second title, the words "General and Abdominal," making the full title read, "Surgery, General and Abdominal."

[It was moved and seconded that this section of the report be adopted. Carried.]

At the same meeting an amendment to the By-Laws was proposed; viz., to add the following Section to Chapter XI:

SEC. 15: MANNER OF PREPARING PROGRAM OF THE SECTIONS. The chairman and secretary of the section may fill not more than two-thirds of the program of his section by special invitation. The rest of the program must be filled from articles submitted to the chairman or secretary of any section, at least three months before the date of meeting. The chairman and secretary shall select from the articles submitted those that appear most meritorious and shall have full power to decide on the value of any article submitted.

After due and deliberate consideration, your Committee recommends that this proposed amendment be not adopted.

[Dr. Arthur T. McCormack, Kentucky, moved that consideration of this section be postponed until immediately after the report of the Reference Committee on Sections and Section Work. Seconded and carried.]

Respectfully submitted,
W. A. JAYNE, Chairman,
FLOYD M. CRANDALL,
CHARLES RICHARD,
PERRY BROMBERG.

Report of Reference Committee on Reports of Officers

Dr. Thomas D. Davis, Pennsylvania, Chairman, presented the report of the Reference Committee on Reports of Officers, as follows:

Your Committee commends the full report and the carefully compiled statistics of your Secretary, and notes with satisfaction the substantial net increase in Fellowships.

The resolution from the California Medical Association we recommend be referred for action to the Committee on Transportation and Place of Session.

In regard to the communication from a committee of the American Institute of Homeopathy, we recommend that as the said committee shows an evident desire to get at the scientific truth concerning their formula, and as there has been no favorable response from either of the three laboratories suggested by them, we recommend that our Secretary inform them of the result of his correspondence with these laboratories and that they be asked to suggest other laboratories, or some practical plan for investigation.

Your Committee is pleased to commend the faithful and extensive labors of your Board of Trustees as shown in their report.

We regret that the increased expense put on them by the action of this House last year has caused a marked decrease in our surplus, and we hope that there will be a decrease in the number of special committees, etc., this year.

We heartily commend the work of the Council on Pharmacy and Chemistry and believe it has accomplished great good for the profession and our citizens.

No more important work has been undertaken, nor none has accomplished more, than that done by the Propaganda Department. We cannot praise its work too highly and recommend its continuance on enlarged lines.

The various publications show an immense amount of labor and gratifying success. We especially note the issuing of the Fourth Edition of the American Medical Directory as a monument of patient investigation, with exceedingly accurate results. It should be in the hands of every physician at all interested in the general profession.

The Cooperative Medical Advertising Bureau fills a great want. It has done much already to raise the standard of the advertisement in state medical journals, and will be the means of securing more and better advertisements for them in the future, at more remunerative terms. We most heartily recommend its continuance.

As to the reserve fund recommended by the Board, there can be no doubt of its business acumen and we recommend that this fund be established as speedily as possible, and to this end we urge the House to be extremely careful concerning unnecessary or extravagant expenditure.

Your Committee most heartily commends the deliverance of the Judicial Council concerning advertising by Fellows of the American Medical Association. The principles of ethics should be observed not only to the letter, but also in the spirit. He who would delight to elevate himself by any such means above his brother practitioner is unworthy of fellowship in this Association, be the advertising covertly or openly done.

Your Committee heartily commends to this House for action the following resolution of the Judicial Council:

> *Resolved*, That it is the sense of the House of Delegates of the American Medical Association that each county society should constitute a publicity committee whose duties shall be to give to the daily press accurate information on all medical matters of interest to the public, that this shall be freely given without the mentioning of names or from whence the information comes, and that this committee shall further act in an advisory capacity to all physicians of its society in questions relating to publications other than in the medical press. Be it further
>
> *Resolved*, That the Secretary of the American Medical Association be instructed to forward this resolution, with the reasons calling for it, to the Secretary of each constituent state association, with the request that it be transmitted to each component society of that constituent association.

Concerning the resolution offered in the House by Dr. Henry F. Lewis of Chicago, we recommend that the decision designated be not published.

First, because our Association is only very remotely, if at all, concerned with the matter, and the room in our JOURNAL can be used for more valuable subjects.

Second, we commend our Editor and Trustees for not publishing it, because the case was still under consideration by a higher court, and no decision had yet been reached.

Third, it should not be published because the Supreme Court of Illinois, on Feb. 21, 1914, overruled the Appellate Court and decreed that the proper judgment had been entered in the Circuit Court, and therefore the Appellate Court's decision is of no value whatever, and not worth publishing.

Respectfully submitted,

THOMAS J. DAVIS, Pennsylvania,
A. R. MITCHELL, Nebraska,
ROCK SLEYSTER, Wisconsin.

The report was taken up seriatim, and on separate motions each section was adopted.

Dr. Arthur T. McCormack, Kentucky, moved the adoption of the report as a whole.

Seconded and carried.

Report of the Judicial Council

Dr. Alexander Lambert, New York, Chairman, presented the following report from the Judicial Council:

The Judicial Council desires to report on the matter referred to it by the House of Delegates, at the suggestion of the Board of Trustees, on the advisability of the American Medical Association holding, in trust, patents for medical and surgical instruments and appliances.

It has long been recognized (and the principles of ethics of the Association definitely state) that it is unprofessional to receive remuneration from patents for surgical instruments or medicines. The principle here promulgated is one which recognizes the fact that all physicians and surgeons should give to the world their best efforts in the endeavor, on the broadest plane, to benefit humanity; and that they should not hold themselves in a special class as receivers of special benefits for any instruments or appliances the excellence of which may benefit humanity. The wisdom of this time-honored tradition and the position taken in consequence of it by the medical profession is not to be questioned; but it has produced a condition which has been turned to the disadvantage of both the profession and the public. Commercial firms have, from a purely business point of view, taken instruments and appliances of real value, either had them patented, or have used the ideas and overcharged the profession (and, consequently, the public) for their manufacture and have substituted inferior products.

The question now before the Council is, "Shall physicians or surgeons, having patented medical and surgical instruments and appliances, be permitted to assign the patents thereof to the Trustees of the American Medical Association, to be held in trust, under the condition that neither the Association nor the patentee shall receive pecuniary remuneration therefor?" The advantages of this procedure would be as follows:

1. It would enable any advance in surgical or medical technic to be protected and kept in the hands and under the control of the profession.
2. It would prevent cheap and worthless imitations of these appliances or instruments being made and put on the market—often to the detriment of both the profession and the public.
3. It would keep the cost of these instruments and appliances down to within reasonable figures and within range that many men of moderate incomes could easily afford to use them and apply them in their daily work — where, heretofore, and under the exploiting system of commercial firms, this has been impossible for them to do.
4. It would permit (if considered wise) further improvements on these instruments without delay and without acrimonious dispute or lawsuits.
5. It would, it seems to the Judicial Council, establish a precedent that would benefit both the profession and the public.

Therefore, for these reasons, the Judicial Council recommends the following resolution:

> *Resolved*, That the Board of Trustees of the American Medical Association shall be permitted to accept, at their discretion, patents for medical and surgical instruments and appliances and to keep these patents, as trustees, for the benefit of the profession and the public; provided, that neither the American Medical Association nor the patentee shall receive remuneration from these patents.

The Judicial Council desires to report, further, concerning the matter referred to it, with power, by the House of Delegates on Tuesday afternoon.

On investigation, it has been found that the gentleman who appeared before the House represented the Medico-Legal Protective Corporation of New York — this corporation being under the protection of the W. J. Burns International Detective Agencies. The scheme which the gentleman desired to place before the House of Delegates is as follows:

As is well known, W. J. Burns is the detective through whose agency are protected against criminality the Bankers' Association, the Jewelers' Association, the Canners' Association, and various other large business corporations. In recent years the criminal blackmailing malpractice suits brought against physicians has increased to such an extent that several large insurance companies writing defense against physicians malpractice suits have been forced to discontinue this form of insurance — the actuaries of these companies being unable to calculate the percentage and amount of criminality that has appeared in these suits. This does not refer in any way to the ordinary civil suits of malpractice in which there is a difference of opinion as to whether surgical or medical procedure was rightly or wrongly carried out; but it does refer to those cases of criminal hold-up brought against physicians, which, by outrageous accusation, the physician's reputation will suffer and he will do anything and pay anything to protect it and keep the matter from being publicly aired. This matter is not a question to be taken up by the House of Delegates of the American Medical Association. In the near future, this gentleman informed members of the Judicial Council, each physician would be personally solicited and an offer of protection given to him for a certain stated sum. It is a new form of cooperative insurance, on a definite commercial basis, which physicians may obtain to protect themselves against criminal malpractice suits. To each one of you, and to each one of the members of your various associations, this Medico-Legal Protective Corporation will offer this special form of insurance. The Judicial Council, therefore, considers that there is nothing further to be done in the matter and that each physician must decide for himself whether or not he wishes to consider the matter further. In the opinion of the Judicial Council, the matter does not properly come before the House of Delegates.

Dr. Thomas S. Cullen, Maryland, moved that the report be adopted.

Seconded and carried.

Supplementary Report of the Council on Health and Public Instruction

Dr. Henry B. Favill, Illinois, presented a supplementary report from the Council on Health and Public Instruction, saying that the Council had received a request from the National Child Labor Association for the passage of a resolution. The Council on Health and Public Instruction had drawn a resolution of its own on the subject which it wished to present to the House of Delegates for its approval.

Whereas, Many thousands of children under 16 years of age are employed in the United States in gainful occupations, under improper conditions, resulting in the impairment of their health and future well-being; and

Whereas, Nineteen States and the Congress of the United States, for the District of Columbia, have already enacted laws limiting the hours of labor for children under 16 years of age to eight hours a day, and prohibiting such children from working at night, or at dangerous occupations; now, therefore, be it

Resolved, By the American Medical Association, that we commend those states which have adopted legislation to protect children under 16 years of age from the disastrous consequences of unsuitable work and bad industrial conditions, and urge all other states to establish for the benefit of such children a work day not to exceed eight hours, and the prohibition of labor at night or in any hazardous employments; and to this end we recommend that all state medical societies affiliated with this association and the medical profession generally advocate the passage of such laws by the legislatures of their respective states; and be it further

Resolved, That we endorse the principles of the Palmer-Owen child labor bill now pending in Congress which seeks to place the said restrictions on the employment of children in this country by means of the federal power to control interstate commerce, and that we notify the sponsors of this measure in Congress of our action.

It was moved that the rules be suspended and that the resolutions be now adopted.

Motion seconded and carried.

Report of Reference Committee on Sections and Section Work

Dr. Hugh Cabot, Massachusetts, reported for the Reference Committee on Sections and Section Work, as follows:

Your Reference Committee on Sections and Section Work had before it three questions, namely:

1. The request for the formation of a Section on Hydrotherapy.

2. The request for the formation of a Section on Gastro-Enterology and Proctology without the limitations attached to it by the last House of Delegates.

3. The request from the Conference of the Secretaries of Sections to consider the advisability of dividing the sections into two groups — General Sections and Special Sections — and allowing a Fellow to present a paper in each group.

1. In regard to the formation of a Section on Hydrotherapy, your Committee feels that it need not consume your time in lengthy discussion, since these methods of treatment clearly belong to the department covered by the Section on Pharmacology and Therapeutics, and can be properly given due consideration in that Section.

2. In regard to the formation of a Section on Gastro-Enterology and Proctology, the question is far more complicated and difficult. In favor of the formation of such a Section, it is very properly urged that the interest in these questions has been sufficient to give rise to the formation of two societies of national scope, and that the number of Fellows who desire to present papers on these subjects is greater than can be accommodated by the sections already in existence.

It is further urged that such a section has already been partly organized, only to be held up because certain conditions were not complied with.

Against the formation of such a Section it is urged, with much force, that these are not well-defined specialties, and that it is not improbable that the swing of the pendulum might soon make the need of such a Section less urgent, if, indeed, it existed at all.

The American Gastro-Enterological Association (one of the two special societies existing in this field) has notified your Committee that it is not in sympathy with the formation of the proposed new Section, and that its members prefer to affiliate with the medical and other already existing sections.

And finally, we have the evidence that the Reference Committee of this body, last year, was unwilling to advise the creation of such a section, except the field be cleared by the disbanding of the existing societies and the number of papers be limited to fifteen.

The whole question of the creation of new Sections — no matter how meritorious—is more complicated than appears at first sight. There are already fifteen sections, for which meeting-places must be provided, stenographers engaged, and stationery printed, at a very considerable cost, and at a time when the Association has tremendous and ever-increasing demands on its finances. Of the fifteen sections, two — medical and surgical — collected (in 1913) to themselves 60 per cent. of the registration; and, of the remaining thirteen, none had 10 per cent. of the registration, and only two had over 1 per cent.; a showing from which it at once appears that the majority of the Sections which we already have attract but a small proportion of the Fellows and are carried on at a correspondingly large expense.

3. The third question before your Committee was the suggestion already referred to, that the Sections be divided into two groups, general and special, and that a Fellow be permitted to present a paper before each group. The two groups are as follows: 1. General: Practice of Medicine, Surgery, Pharmacology and Therapeutics, Pathology and Physiology, and Preventive Medicine and Public Health. 2. Special: Obstetrics, Gynecology and Abdominal Surgery, Ophthalmology, Laryngology, Otology and Rhinology, Diseases of Children, Stomatology, Nervous and Mental Diseases, Dermatology, Genito-Urinary Diseases, Hospitals, and Orthopedic Surgery. It will be remembered that it is only a year since the By-Laws were changed so as to prevent a Fellow from reading a paper before more than one Section. Already this regulation has proved too onerous. Clearly there are many and important considerations involved, a considerable proportion of which may not as yet come to the surface.

As further evidence that this question is complicated and difficult, we would remind you that there are also two other questions concerning the sections which have been referred to another committee.

These are some of the questions involved in the propositions which are before your committee, and they seem to us too many and too complicated to be satisfactorily solved, except after mature deliberation and much consultation and discussion. We believe that the time has come when the whole question of the division into sections and the apportionment of the work of the Association among the sections should be taken up in a comprehensive way.

We, therefore, recommend to the House of Delegates the creation of a committee of five, to be appointed by the President. This committee should be charged with the investigation of the whole matter of Sections and Section work, and should be required to report their findings and recommendations to the next House of Delegates.

On motion, which was duly seconded, the report and recommendations of the committee were adopted.

The Secretary presented a communication from the officers of the Section on Surgery, nominating for honorary fellowship Dr. Alexander Primrose of Toronto, which was referred to the Reference Committee on Sections and Section Work.

Dr. W. A. Jayne, Colorado, moved that the suggested amendment to the By-Law on the manner of preparing programs for the sections be not adopted at this meeting, but that the matter be referred to the special Committee on Sections and Section Work.

Seconded and carried.

Dr. William A. Pusey, delegate from the Section on Dermatology, presented the following preambles and resolution, which were referred to the Reference Committee on Hygiene and Public Health:

Whereas, Leprosy exists in many foci in this country and has been statistically shown to be on the increase, and

Whereas, Those afflicted with leprosy are being subjected to inhuman treatment, and already gained and rapidly increasing of convincing the people that the altruistic and philanthropic endeavors of this Association for the improvement of health conditions, both individual and public, and for the elevation of the standards of medical practice, are not tainted with selfishness or ulterior motives. It is not necessary that the Reference Committee do more than emphasize certain portions of the numerous activities undertaken by the Council, as there are no recommendations in the report requiring a vote of the House on adoption or rejection.

The report of the Council suggests that its activities for the coming year be directed along three general lines, namely: (1) a thorough investigation of present health conditions; (2) the education of the public; (3) crystallizing public opinion on the necessity and practicability of conserving human life.

Your Committee strongly indorses the Council's efforts to correlate existing national health organizations in this country, as described in the report, and recommends that the Council continue its endeavors in this direction. This work contemplates surveys of the public health activities of the federal government and of other national governments for purposes of comparison; of state public health activities; of municipal health activities, and of voluntary national health organizations. It is apparent that our efforts to direct public opinion in the right channel for the conservation of human health and life would thereby be greatly simplified.

The Council has opened a new branch of investigation during the past year, namely, the Medicolegal Bureau, through which information concerning medicolegal questions in all the states may readily be obtained at a common source. It has already prepared a volume containing all the decisions of the supreme courts of this country on medical practice acts; this will be enormously valuable to the medical profession as well as to the legal profession. This book will be issued during the present year.

Among the subcommittees of the Council your Reference Committee desires to commend in the highest terms the work of the Committee on Public Health Among Women. Its influence with the mothers of the country is of incalculable value in the spread of correct ideas for the conservation of child life.

Your Committee would impress on the delegates the importance of the recommendation in the commendable report of the Committee on Defense of Medical Research, namely, that state journal editors scrutinize manuscripts of articles offered for publication with the view of including a statement that anesthesia was employed when in fact that was the case, in order to prevent the circulation of false impressions or misunderstandings by antivivisectionists.

The work of the Committee on Conservation of Vision, appointed in 1913, demonstrates the need of such a division of the Council's activities. The report gives promise, through the splendid results already achieved, that this committee will be very influential in preventing blindness.

The Committee on Revision of the Owen Bill has not been inactive, but could make no progress on account of the many questions before Congress that overshadowed this and other less acute conditions. Your Committee recommends that the House of Delegates reaffirm its endorsement of the principles governing the movement to create a national Department of Health, and commends the Honorable Robert L. Owen for his assiduous championship of such a department.

The Committee on Uniform Regulation of Membership is performing a service in promoting harmonious and uniform methods of organization work that could not otherwise be accomplished, and therefore your Committee recommends that it be continued.

The Committee on Cancer is another recently appointed subcommittee (November, 1913) which has accomplished such excellent results as to justify its creation. While the committee limited its work this year to the issuance of popular articles on cancer, it succeeded in distributing six pamphlets that have been eagerly sought by an increasing number of persons, lay and medical. Your Reference Committee urges all members and Fellows to accord the Committee on Cancer the support and cooperation it asks; such support is essential in this particular field of medical endeavor.

The spontaneous response to the overtures of the Committee to Confer with the National Educational Association to gain the cooperation of the latter body in the cause of public health is a most gratifying and convincing evidence of the far-reaching influence of the work of the Council on Health and Public Instruction; for without the splendid achie[illegible] Council in the past three years it is certa[illegible] that the su committee could not have presented such weighty argume favoring the cooperation of these two bodies. Instancing o one feature of this important report, we remind you of t statement by this Committee that the health of count schoolchildren is far below the standard of city schoolchi dren, as shown by surveys, which so shocked and surpris the members of the National Education Association as arouse a general desire on their part to improve the cond tions of rural school life.

The report of the Committee on Expert Testimony is, w believe, conservative and based on a sound understanding c well-known conditions. The solution of this vexed proble cannot be forced; it must come gradually and with the cooperation of the American Bar Association and the various stat bar associations. If the recommendations of the Committe on Expert Testimony are adopted in court procedures, leg contests will be stripped of much of the stigma that no attaches to expert testimony, and especially to medical expe testimony, and lead to further improvement. We recommen that the Council's purpose to issue a draft of a bill for th consideration of state legislatures be endorsed.

In concluding this report, your Reference Committe expresses the conviction that the activities of the Council o Health and Public Instruction are vital to the welfare of th American Medical Association. The work of the Council wi either promote a friendly spirit of cooperation on the part o the people or arouse their opposition. Thus far, nothing bu a commendable and very gratifying attitude of cordiality o the part of the people has been exhibited toward the Council and this is due, we believe, to the broad, liberal and judiciou manner adopted by the Council in approaching the problem that confront it. No radical departure from this course shoul be permitted.

In order that the work of the Council on Health and Publi Instruction and of its various subcommittees may meet th unanimous support of the constituent state associations, you Reference Committee reaffirms the recommendation of th Reference Committee of 1913, namely:

"That the Council in developing its activities . . . [illegible] work through the constitutent state associations and [illegible] committees rather than by the creation of new or special committees; and that all committees and persons representing any department of the American Medical Association or representing any of its activities within the borders of any constituent state association shall be appointed by the executive officers of the state associations; and such committees shall be under the jurisdiction and control of the state association and responsible to the Council on Health and Public Instruction through the state association.

"That no committee shall be appointed by the sections or by any subcommittee with duties extending into the territory of any constituent state association. That all such committees shall be appointed by the constituent state association and be under the jurisdiction and control of the state association."

Three resolutions on the question of medical expert testimony were referred to your Committee, namely, one by Dr. J. J. McGovern, delegate from Wisconsin; one from the Section on Ophthalmology, and one containing a copy of a suggested bill on medical expert testimony in Pennsylvania.

Your Committee has given these resolutions very careful consideration. The Committee thoroughly appreciates the present unsatisfactory conditions surrounding expert testimony. The simultaneous appearance of so many suggestions from Fellows and branches of the Association emphasizes the great necessity for clarifying this question at as early a time as possible and is an evidence that the members and Fellows have an abiding faith in the efficiency of the organization to solve questions that affect the practice of medicine in all its phases. Your Committee believes, however, that the Council on Health and Public Instruction is in position to bring about a solution to this question more speedily and more satisfactorily than can be done by the duplication of committees working along similar lines. Your Committee recommends that the resolutions be referred to the Council on Health and Public Instruction.

The resolution introduced by Dr. Morgan Smith, delegate from the Section on Preventive Medicine and Public Health, is not sufficiently lucid to enable this Committee to arrive at a conclusion of its purpose and intent. It is recommended that the resolution be referred to the Council on Health and Public Instruction for their consideration.

I received a letter from the proprietor of the Hotel Knickerbocker, New York, from Bad-Nauheim, who writes me that the city has erected a runway a mile long and about 50 feet in height. It is filled with branches of trees and they sprinkle salt water over the branches each day and tell the patient to wander along this runway and inhale the salt water. (Laughter.)

They advise American patients when they go home to come to Atlantic City. I can say to you as one who is convalescing that Atlantic City is rich in its rolling-chairs so that you can all enjoy the sea breezes. If any of you are sick, I would recommend that you stay here for some time.

Furthermore, I will say to you that Atlantic City and its government stand ready to do anything in their power to make your visit a pleasant one, and we hope that you will honor us by returning to this city very soon. We have many advantages which they do not have in other cities. For instance, our hotels are so concentrated that the delegates find it easy to get to the places of meeting. There is not the difficulty in bringing the delegates together which you will find in some cities. There are other attractions. You have come here during the season for bathing. You can have an ocean bath at any time. We have a splendid country club, which I hope you will visit. Only a few miles from here you will find that the fishing is good.

Again, I desire to thank you for your visit to Atlantic City and to say that we are grateful to you for making it such a great resort. (Applause.)

ADDRESS OF WELCOME BY THE PRESIDENT OF THE MEDICAL SOCIETY OF NEW JERSEY

Dr. Enoch Hollingshead was introduced and said:

Mr. President, Members of the American Medical Association, Ladies and Gentlemen: It gives me pleasure to greet you in the name of the Medical Society of New Jersey, the oldest State Medical Society in America. We greet you as Allah greets the rising sun, with reverence. We greet you as friends. We greet you as brothers on their own threshold. We greet you in this city with breezes laden with ozone from the ocean. We greet you as creators of medical thought, believing that you are of the best in the country, if not in the world. We greet you in bringing to us America's best thought for the benefit of all mankind, and especially for our own country, believing that no nation can be successful that does not make its medical object high. We welcome you from valley, hill and plain, and from every section of our vast domain, believing that the experiences which you will relate here will be of vast and incalculable benefit to mankind. Again, I greet you. (Applause.)

ADDRESS BY THE ATTORNEY-GENERAL OF NEW JERSEY

After announcements by the Chairman of the Committee of Arrangements, Dr. William Edgar Darnall, Atlantic City, the Hon. John Westcott, attorney-general of New Jersey, was introduced and said:

Mr. President, Members of the American Medical Association, Ladies and Gentlemen: This whole proceeding at the present time suggests a physician direct to the point, without fuss and without feathers, and the incongruity of the situation is that a lawyer should be among you. A lawyer among doctors is perhaps not in the right place (laughter), yet I can readily see that he is in the right place because, being a necessary evil, and the function of the physician being that to exclude necessary evils, the best way to get rid of the lawyer is to put him among physicians. (Laughter.)

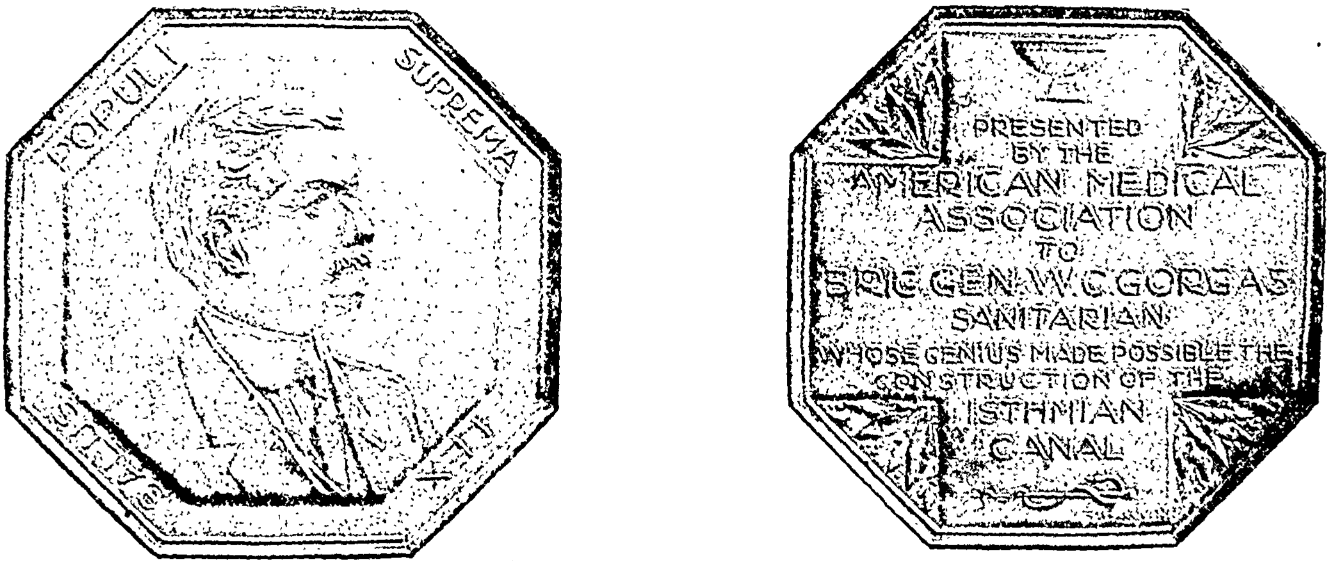
You have been welcomed by the mayor to the queen of all summer resorts. You have been welcomed by the president of the medical society of the great state of New Jersey. Through the governor of New Jersey, a man whose mind is sensitive to modern progress, I am commissioned in behalf of the state to welcome you. The great difficulty is for a lawyer to know the appropriate thing to say. I once heard of a young man who was much concerned about his destiny and his duty as a human being. After looking over the field carefully, he concluded that he could do the most good by saving human souls, so he became a preacher. Very soon he was disabused of his misconception and he found that men were more concerned about their bodies than they were about their souls. He straightway became a physician. He soon perceived the error of his second choice and found that, after all, men were more concerned about their pocketbooks than either their bodies or souls, so he became a lawyer. (Laughter.) I believe that men are destined to care less for their pocketbooks than they care for their souls and bodies. I believe that the human family is coming to realize that the soul and body are so closely identified that you cannot have a great soul without a great body. (Applause.)

The medical profession from the point of view of a stupid lawyer seems up to this time to have been a profession of empiricism, a profession of individual action, and almost necessarily so because the physician deals with a specific case all the time and he never knows its parallel exactly; and I will remark in passing that it is said of the lawyer that he is a machine and the only machine on earth that when once set going never knows when to stop. (Laughter.)

I was about to observe that the medical profession has developed a peculiar type of courage. The martyr goes to his doom; a soldier now and then goes to his death under circumstances of tremendous dramatic significance—excitement. The doctor, on the other hand, not once in a century, not when a war occurs, but hourly, every day of his life, not under circumstances of excitement, but under conditions of mental calm, under the force of poise, confronts not only danger but actually walks into the jaws of death, and he does it silently, unknown, unseen and unsung. Hence the physician by the necessity of his training and calling has developed a peculiar type of courage, and I do not hesitate to say, the highest species of courage known to the human animal. The force of that remark is to be found in what I am now about to say. The medical profession up to now has been a profession of separateness, if I may use the expression. The physician has had to go it alone. The characteristic of the age is cooperation. Cooperation is the expression of economy. The physician finally has come to appreciate the power of coordination and cooperation; hence your presence here to-day. I trust, and I have no doubt it will come to pass, that not only every state will have its medical organization, but also every county in every state; and every county organization should be closely affiliated with the state organization and every state organization with the national organization; then with 250,000 of the bravest men in the land thus coordinated, thus cooperating, much will be done for the redemption of society or its improvement. (Applause.) Such a cooperative scheme will result in the oneness of purpose that is simply resistless; therefore, such an organization can effect legislation in every state in the Union, and in the national legislature looking to the improvement of the people. When I say improvement of the people, what do I mean? I mean morals, religion, as well as physical conditions, because without complete physical conditions you cannot have a complete morality, nor can you have a sound theology, nor can you have an inspiring religion. The physician up to now, as I understand it, while he has labored at the foundation of society, has done so piecemeal. You have worked at each block of stone in the foundation, but not at the foundation by a scheme and a general purpose; consequently you have scattered far; now you are concentrating your energy. Therefore, I say, the physician is a philosopher; he is an economist; he is a politician, and I go so far as to say that the soundness of our institutions and their perpetuity rest more in the hands of the medical profession than in the hands of any other class of men. In the hands of the medical profession rests the future of this country, because in the hands of your profession rest the physical lives of the country, because in the soundness of the physical life of the country rests its morality, its religion and its patriotism. (Applause.)

One more suggestion or concluding observation is this: I have observed that the human animal is a susceptible creature in every direction. I am not going to talk about the philosophy of love. The average man or woman in picking up a newspaper and reading an advertisement in relation to his health will by the constructive processes of his imagination immediately appropriate as a part of his own physical life the delineation of every symptom that he finds stated in that advertisement as belonging to him, and the disease which that advertisement portrays in such awful colors as his disease. Such is the plasticity of the human mind. At the end of that advertisement there is a proposition to cure that disease, and it is immediately believed and straightway the reader of that advertisement hies himself to a drug-store and buys his freedom from disease. What does he buy? He buys a compound. What is that compound? God only knows. It is called euphoniously a proprietary concoction. This concoction is not created with scientific knowledge, but with a correct comprehension of human weakness, impelled by the desire in the creator of the compound to do what a lawyer does—take everybody's money in sight. (Laughter.) Statistics on the subject are obtainable, I am told. I have seen some; but how reliable they are I do not know. I assume from the sources that these statistics are approximately correct. While not wearying you with statistics, you will agree with me in the assertion that the American people are every moment of their lives, every hour in the day, every day in the week, every week in the month, and every month in the year, consuming these unknowable compounds, when they are in the solid form, by the ton; when they are in the liquid form, by the hogshead—millions of gallons of this liquid stuff are consumed by the American people annually. In other words, the very foundations of society have poured into them every day destruction through proprietary medicines. What are you doctors going to do about it? You are organized. Your organization will become more and more perfect every day if you have the courage of which I have spoken, and I know you have, to keep on agitating this question for the nefit of the people. See that the manufacturers of these sons are hedged about by such legislative reforms as dge you about and compel you to know what you are doing. (Applause.)

So, I conclude, Mr. President, with the laudation not only that your profession carries in the hollow of its hand the destinies of this country, but also that your most conspicuous duty at the present time is to see that the American people are saved from a continuous process of poisoning through liberated ignorance. (Loud and prolonged applause.)



Medal presented to Surgeon-General Gorgas by the American Medical Association.

President Witherspoon said:

As your retiring president, I want to respond briefly to these addresses of welcome and to say to the people of Atlantic City how much we appreciate them. I want especially to express our gratitude and thanks to the last speaker for his remarks. He has not only spoken of our organization and of the unit from the county to the state society and from the state society to the national society, but also he has absolutely followed the trail that we have fought along the road through the wilderness of ignorance until it would seem that he had been employed as counsel of the American Medical Association. (Laughter.)

I endorse the remarks of the attorney-general and have adopted them long since as the motto in the great work of the American Medical Association. (Applause.)

Presentation of Gold Medal to Surgeon-General Gorgas

Dr. Witherspoon then said that one of the acts of his administration was to appoint a special committee, of which Dr. Charles A. L. Reed was made chairman, and he asked Dr. Reed to make a report for that committee.

Dr. Reed said:

Mr. President: It is my privilege and happiness to present to you an illustrious member of the medical profession to be the recipient of a gold medal of appreciation now to be conferred by the American Medical Association. Citizen of the republic, graduate in arts and medicine, doctor of science from renowned institutions at home and over seas, army surgeon designated and promoted by special act of Congress to eradicate yellow fever from Havana, member of the Isthmian Canal Commission, chief sanitary officer of the Isthmian Canal Zone, international consultant on great sanitary problems, Fellow and former President of the American Medical Association, honorary and associate fellow of numerous foreign scientific associations, now Surgeon-General of the United States Army, illustrious scientist, executive, writer and scholar, William Crawford Gorgas, Sanitarian, whose genius made possible the construction of the Isthmian Canal. (Applause.)

President Witherspoon continued:

General Gorgas, one of the acts of my administration, of which I am very proud, was the appointment of this special committee for the purpose of showing to the world our appreciation of ability, our appreciation of greatness, our appreciation of that wonderful genius which has made it possible, sir, for you not only to demonstrate to the world that it was possible to build the Panama Canal, but also to go further and show, as you have done, that 500,000 lives which have been lost in our country by preventable diseases can be and will be prevented finally with you at the head of the Army of our country. We hope you will always be at the head of the sanitary protection of our people.

As retiring president of the American Medical Association, it gives me great pleasure to turn over and to present to you, General Gorgas, a gold medal in commemoration of your wonderful ability and your wonderful work that has connected nations and has taught the world that the American Medical Association contains a man who dared to do what was right for the salvation of mankind. (Loud and prolonged applause.)

General Gorgas, in accepting the gold medal, said:

I thank you, Mr. President, and Fellows of the American Medical Association. I appreciate, of course, the great honor of this occasion, but I would like to have you think that this honor is to be shared by three or four hundred young Americans who have labored in this sanitary work on the Canal Zone, and I receive this medal in part as their chief and as their representative. Again, I thank you. (Loud applause.)

President Witherspoon then said:

The final act of my administration is to introduce to you the man of your choice to preside over your deliberations next year.

I want to say in retiring that my labors have been pleasant; they have been to me a great inspiration, and one of the greatest pleasures of that administration was to follow in the footsteps of such a man as the great Jacobi, and to be followed by such a man as the great Dr. Vaughan. (Applause.)

Dr. Victor C. Vaughan, Ann Arbor, Mich., then delivered his address as President of the American Medical Association, entitled "The Service of Medicine to Civilization," which was published in The Journal, June 27, 1914, p. 2004.

Minutes of The Sections

SECTION ON PRACTICE OF MEDICINE

Tuesday, June 23—Afternoon

The meeting was called to order by the chairman, Dr. Charles Lyman Greene, St. Paul, Minn.

Dr. H. B. Hiatt, High Point, N. C., and Dr. William Allan, Charlotte, N. C., presented a paper entitled "Will Sprue Become Endemic in the United States? Notes on Cases Invalidated from the Tropics." Discussed by Drs. Roger S. Morris, Clifton Springs, N. Y., and H. B. Hiatt, High Point, N. C.

Dr. Tom A. Williams, Washington, D. C., read a paper on "The Syndrome of Adrenal Insufficiency." Discussed by Drs. Frank R. Starky, Philadelphia; Walter L. Bierring, Des Moines, Iowa, and Tom A. Williams, Washington, D. C.

Dr. George Douglas Head, Minneapolis, read a paper on "Neurasthenia and Tuberculosis (Concealed)." Discussed by Drs. Nathan Rosewater, Cleveland; F. M. Pottenger, Monrovia, Cal.; Charles Stover, Amsterdam, N. Y.; Eliza M. Mosher, Brooklyn, N. Y.; A. J. Caffrey, Milwaukee; John Ritter, Chicago; Tom A. Williams, Washington, D. C.; Walter B. Swift, Boston; Albert Robin, Wilmington, Del.; H. S. Plummer, Rochester, Minn.; J. P. Murray, Charlotte, N. C.; Robert W. Willson, Philadelphia, and George Douglas Head, Minneapolis.

Dr. Arthur F. Chace and Dr. M. S. Fine, New York, presented a paper on "The Use of Atophan and Radium Emanation in the Treatment of Gout and the Arthritides." Discussed by Drs. Charles G. Stockton, Buffalo, N. Y.; S. Solis Cohen, Philadelphia, and Arthur F. Chace, New York.

Dr. Louis G. Heyn, Cincinnati, O., read a paper on "Satisfactory Results from Intrarectal Administration of Sodium Salicylate in Acute Rheumatic Fever." Discussed by Drs. E. W. Mitchell, Cincinnati, O.; Joseph L. Miller, Chicago; J. N. Upshur, Richmond, Va.; J. M. Rector, Columbus, O.; James C. Tyson, Philadelphia; Nathan Rosewater, Cleveland, O.; W. W. Tompkins, Charleston, W. Va. and Louis G. Heyn, Cincinnati, O.

Wednesday, June 24—Morning

The Chairman appointed a nominating committee to report at a subsequent meeting, consisting of Drs. Joseph L. Miller, Chicago; W. S. Thayer, Baltimore, and Alexander Lambert, New York.

A joint meeting was held with the Section on Pathology and Physiology.

The following papers were read as a Symposium on Nutrition:

Prof. L. B. Mendel, New Haven, Conn.: "The Specificity of the Nutrients."

Prof. Otto Folin, Boston: "The Intermediary Metabolism."

Prof. Graham Lusk, New York: "The Specific Dynamic Action of Food."

Dr. Eugene F. Du Bois, New York: "The Total Energy Requirements in Disease as Determined by Calorimetric Observations."

These four papers were discussed by Drs. Victor C. Vaughan, Ann Arbor, Mich.; S. J. Meltzer, New York; F. M. Pottenger, Monrovia, Cal.; E. P. Joslin, Boston; A. D. Eustis, New Orleans; George Douglas Head, Minneapolis; A. J. Carlson, Chicago; L. B. Mendel, New Haven, Conn.; Otto Folin, Boston; Graham Lusk, New York, and Eugene F. Du Bois, New York.

Wednesday, June 24—Afternoon

Dr. Robert N. Willson, Philadelphia, read a paper on "The Heart in the Pneumonias." Discussed by Drs. James M. Anders, Philadelphia; W. S. Thayer, Baltimore, and Robert N. Willson, Philadelphia.

Drs. C. Frothingham and W. G. Smillie, Boston, presented a paper on "Effect of Low and High Nitrogen Diet on Renal Function Tests in Chronic Nephritis." Discussed by Drs. L. G. Rowntree, Baltimore; De Lancey Rochester, Buffalo; L. F. Bishop, New York; Jonas, Philadelphia; Walter L. Bierring, Des Moines, Iowa, and C. Frothingham, Boston.

Drs. Harlow Brooks and John Carrol, New York, presented a paper on "The Treatment of Heart Involvement in Syphilis."

Dr. Richard C. Cabot, Boston, read a paper on "The Four Common Types of Heart Disease."

Dr. Alfred Stengel, Philadelphia, read a paper on "Cardiovascular and Renal Responsibility in the Disturbances of Cardiorenal Disease."

These three papers were discussed by Drs. Emanuel Libman, New York; S. Solis Cohen, Philadelphia; Charles Williamson, Chicago; H. S. Plummer, Rochester, Minn.; L. F. Bishop, New York; Robert N. Willson, Philadelphia; Graham E. Henson, Jacksonville, Fla.; Richard C. Cabot, Boston; Harlow Brooks, New York, and Alfred Stengel, Philadelphia.

Drs. L. G. Rowntree, Allen Chesney and E. K. Marshall, Baltimore, presented a paper on "Studies in Liver Function." Discussed by Dr. William S. Thayer, Baltimore.

Thursday, June 25—Morning

The following officers were elected: Chairman, Dr. Thomas MacCrea, Philadelphia; Vice-Chairman, Dr. John L. Dawson; Charleston, S. C.; Secretary, Dr. Roger S. Morris, Clifton Springs, N. Y.; Delegate, Dr. Richard C. Cabot, Boston, and Alternate, Dr. E. E. Irons, Chicago.

Dr. Elliott P. Joslin, Boston, read a paper on "End Results in Gastric and Duodenal Ulcer."

Dr. Frank Smithies, Chicago, read a paper on "Gastric Cancer in the Young: A Study of Fourteen Cases in Patients Under the Age of Thirty-One."

These two papers were discussed by Drs. J. N. Hall, Denver; F. B. Lund, Boston; Frank Billings, Chicago; J. A. Lichty, Pittsburgh; Alexander Lambert, New York; F. A. Speik, Los Angeles; Allen A. Jones, Buffalo, N. Y.; J. R. Verbrycke, Washington, D. C.; Anthony Bassler, New York; George Douglas Head, Minneapolis; M. H. Fussell, Philadelphia; J. M. Rector, Columbus, O.; Elliott P. Joslin, Boston, and Frank Smithies, Chicago.

Dr. Frank Billings, Chicago, read a paper on "Focal Infection: Its Broader Application in the Etiology of General Disease."

Dr. E. C. Rosenow, Chicago, read a paper on "The Newer Bacteriology of Various Infections Determined by Special Methods."

These two papers were discussed by Drs. William S. Thayer, Baltimore; A. C. Griffith, Kansas City, Mo.; Frank Smithies, Chicago; Emanuel Libman, New York; James M. Anders, Philadelphia; De Lancey Rochester, Buffalo, N. Y.; Alfred Stengel, Philadelphia; Frank Billings, Chicago, and E. C. Rosenow, Chicago.

Dr. C. F. Hoover, Cleveland, O., read a paper on "The Dead Space and Alveolar Air in Emphysema and Bronchial Asthma." Discussed by Drs. Allen A. Jones, Buffalo, N. Y.; George N. Jack, Buffalo, N. Y., and C. F. Hoover, Cleveland, Ohio.

Thursday, June 25—Afternoon

Dr. Henry F. Stoll, Hartford, Conn., read a paper on "Late Manifestations of Inherited Syphilis with Especial Reference to Arterial Disease." Discussed by Drs. Robert N. Willson, Philadelphia; W. Y. Watson, Baltimore; A. C. Griffith, Kansas City, Mo., and Henry F. Stoll, Hartford, Conn.

Dr. W. E. Robertson and Dr. J. V. Klauder, Philadelphia, presented a paper on "Various Types of Lues: A Clinical and Laboratory Study; the Abelin Reaction; Direct Subdural Injections." Discussed by Drs. J. V. Klauder, Philadelphia; W. W. Tompkins, Charleston, W. Va., and W. E. Robertson, Philadelphia.

Dr. Graham E. Hensen, Jacksonville, Fla., read a paper entitled "A Study of the Arneth Formula."

Dr. James S. Brotherhood, Clifton Springs, N. Y., read a paper on "Salvarsan in Pernicious Anemia." Discussed by Drs. W. E. Robertson, Philadelphia; W. W. Tompkins, Charleston, W. Va.; Robert N. Willson, Philadelphia; E.

Lindeman, New York; Tom A. Williams, Washington, D. C., and James S. Brotherhood, Clifton Springs, N. Y.

Dr. E. Lindeman, New York, read a paper on "The Medical Apparatus of Blood Transfusion by the Syringe-Cannula System Without Skin Incision." Discussed by Drs. G. M. Dorrance, Philadelphia; E. Adolphus Knopf, New York; E. A. Jaffin, Jersey City, N. J., and E. Lindeman, New York.

SECTION ON SURGERY

Tuesday, June 23—Afternoon

The Chairman, Dr. Charles H. Frazier, Philadelphia, called the meeting to order at 2:15 p. m. and stated that the Section would go into executive session.

Dr. F. B. Lund, Boston, presented the following motion:

> *Resolved,* That the Section on Surgery respectfully request the House Delegates to amend Chapter XI, Section 1 of the By-Laws by omitting *from the title of the third section the words* "and Abdominal Surgery," so that the title shall read, as it formerly did, "Section on Obstetrics and Gynecology."
>
> [See Minutes of House of Delegates.]

This motion was duly seconded and carried. Dr. F. B. Lund was asked to present the motion to the House of Delegates.

Dr. Frazier then read the Chairman's address, entitled "The Cerebrospinal Fluid as a Problem in Intracranial Surgery."

Dr. Felix Landoir read a paper by Dr. Herman Küttner, Breslau, Germany, entitled "A Contribution to the Surgery of Brain Tumors." Discussed by Drs. William G. Spiller, Philadelphia, and Harvey Cushing, Boston.

Dr. Allen B. Kanavel, Chicago, read a paper entitled, "Osteoplastic Closure of the Trifacial Canals. An Experimental and Clinical Study Illustrated by Lantern-Slides." Discussed by Dr. S. J. Mixter, Boston.

Dr. Vilray P. Blair, St. Louis, read a paper entitled, "Treatment of Unlocalized Intracranial Injuries by Drainage through a Subtemporal Approach." Discussed by Drs. Charles A. Elsberg, New York; C. A. Evans, Milwaukee; C. E. Ruth, Des Moines, Iowa, and V. P. Blair, St. Louis.

Dr. Archibald MacLaren, St. Paul, read a paper entitled, "A Study of 300 Cases of Appendicitis with Special Reference to Pelvic Complications."

Dr. J. E. Moore, Minneapolis, read a paper entitled, "Has the Last Word Been Spoken Concerning Appendicitis?"

These two papers were discussed by Drs. A. J. Ochsner, Chicago; J. M. T. Finney, Baltimore, and L. Davis, Boston.

Wednesday, June 24—Morning

Dr. F. B. Lund, Boston, read a paper entitled, "Congenital Cystic Kidney." Discussed by Drs. D. N. Eisendrath, Chicago; A. L. Chute, Boston; A. D. Bevan, Chicago; A. J. Ochsner, Chicago; F. W. McRae, Atlanta, Ga., and F. B. Lund, Boston.

Dr. John B. Murphy, Chicago, read a paper entitled, "Ischemic Myositis of the Arm, Forearm and Leg, with Subsequent Contractions." Discussed by Drs. E. Laplace, Philadelphia; Dean Lewis, Chicago; Mr. Harold Collinson, Leeds, England, and Dr. J. B. Murphy, Chicago.

Dr. William L. Rodman, Philadelphia, read a paper entitled, "A Simple Method of Tapping a Distended Bladder and Making Permanent Drainage." Discussed by Drs. H. M. Christian, Philadelphia, and Alexander Randall, Philadelphia.

Dr. R. Matas, New Orleans, read a paper entitled, "Testing the Efficiency of the Collateral Circulation; Its Importance in Determining Surgical Intervention and Methods of Applying the Tests."

Dr. Alexius McGlannan, Baltimore, read a paper entitled, "Aneurysm of the Posterior Tibial Artery, with Report of Two Cases."

These two papers were discussed by Drs. B. M. Bernheim, Baltimore; A. Primrose, Toronto; John W. Price, Jr., Louisville, Ky.; J. Shelton Horsley, Richmond, Va.; R. Matas, New Orleans, and A. McGlannan, Baltimore.

Dr. Axel Werelius, Chicago, read a paper entitled, "Experimental Surgery of the Heart and Lungs." Discussed by Drs. John B. Murphy, Chicago; E. Wyllys Andrews, Chicago, and Willy Meyer, New York.

The Chairman announced that he had appointed Drs. A. J. Ochsner and C. H. Mayo to take the place of absent members of the Executive Committee.

Wednesday, June 24—Afternoon

Dr. J. C. Bloodgood, Baltimore, delivered the Oration on Surgery, entitled "The Relations of the Surgeon to the Conquest of Cancer." No discussion.

Mr. F. M. Corner, London, England, read a paper entitled, "Exploration of the Knee-Joint and Its Teachings." Discussed by Drs. John B. Murphy, Chicago; H. O. Marcy, Boston; Frederick J. Fassett, Seattle, Wash., and F. M. Corner, London, England.

Dr. Charles H. Mayo, Rochester, Minn., read a paper entitled, "Exophthalmos and Methods of Surgical Treatment." Discussed by Drs. Dean Lewis, Chicago, and C. H. Mayo, Rochester, Minn.

Mr. Harold Collinson, Leeds, England, presented a paper entitled, "Some Present-Day Problems in the Surgical Treatment of Gastric and Duodenal Ulcer." Discussed by Drs. John B. Deaver, Philadelphia; A. J. Ochsner, Chicago; J. M. T. Finney, Baltimore, and Mr. H. Collinson, Leeds, England.

Dr. T. Turner Thomas, Philadelphia, read a paper entitled, "Mechanism for Injuries of the Shoulder Region: Results of Forty Operations." Discussed by Drs. A. C. Wood, Philadelphia, and T. T. Thomas, Philadelphia.

Dr. E. Wyllys Andrews, Chicago, read a paper entitled, "Operation on Thoracic Wall for Relief of Bronchial Asthma." Discussed by Drs. Samuel Robinson, Boston; Charles Goodman, New York; G. N. Jack, Buffalo, N. Y., and E. W. Andrews, Chicago.

Dr. Henry H. M. Lyle, New York, read a paper entitled, "Aperiosteal Amputation (Hirsch-Bunge)." Discussed by Drs. F. J. Cotton, Boston, and H. H. M. Lyle, New York.

Thursday, June 25—Morning

Dr. E. S. Judd, Secretary, announced the following nominations for officers for the ensuing year: Chairman, Charles H. Peck, New York; Vice-Chairman, Dr. Wallace Terry, San Francisco; Secretary, Dr. E. S. Judd, Rochester, Minn.; Orator, Dr. S. J. Mixter, Boston; Delegate, Dr. Dean Lewis, Chicago.

Dr. Frazier asked Drs. Primrose and Haggard to conduct the Chairman-Elect to the platform. Dr. C. H. Peck then said:

> Mr. Chairman and Fellows of the Section: I fully appreciate the great honor you have done me in electing me to this position, an honor that I never expected to achieve, and I can only say that in payment for that I will promise to give the best that there is in me to the work of the Section during my tenure of office in maintaining its high ideals and the great influence it has and should have in the future on the surgeons and in the surgery of this country. Thank you very much.

Dr. George W. Crile, Cleveland, read a paper entitled, "Anoci-Association in Relation to Operations on the Gall-Bladder and the Stomach." Discussed by Drs. W. D. Haggard, Nashville, Tenn.; E. Laplace, Philadelphia; Robert T. Morris, New York; A. J. Ochsner, Chicago; Conrade A. Howell, Columbus, Ohio, and G. W. Crile, Cleveland.

Dr. Fred T. Murphy read a paper by himself and Dr. Barney Brooks, St. Louis, entitled, "The Problem of Intestinal Obstruction: Effort to Explain Variable Clinical and Experimental Results." Discussed by Drs. J. W. Draper, New York; John A. Hartwell, New York, and F. T. Murphy, St. Louis.

Dr. Alexander Primrose, Toronto, Ont., read a paper entitled, "Internal Hernia Due to an Aberrant Middle Colic Artery." Discussed by Drs. Charles A. Powers, Denver; W. B. Coley, New York, and E. Wyllys Andrews, Chicago.

Dr. Donald Guthrie, Sayre, Pa., read a paper entitled, "The Rodman Operation for Cancer of the Breast."

Dr. J. W. Vaughan, Detroit, read a paper entitled, "Cancer Vaccine and Anticancer Globulins as an Aid in the Surgical Treatment of Malignancy."

These two papers were discussed by Drs. Parker Sims, New York; William L. Rodman, Philadelphia; J. C. Bloodgood, Baltimore; William B. Coley, New York; N. N. Lucid, Cortland, N. Y.; Henry S. Wieder, Philadelphia; Julius H. Jacobson, Toledo, Ohio; Donald Guthrie, Sayre, Pa., and J. W. Vaughan, Detroit.

Thursday, June 25—Afternoon

A joint meeting was held with the Section on Hospitals. The following papers were read as a Symposium on Surgical Service in the Hospital:

Dr. J. M. T. Finney, Baltimore: "The Standardization of the Surgeon."

Mr. F. D. Gilbreth, Providence, R. I.: "Motion Study in Surgery."

Dr. H. O. Collins, Minneapolis: "The Surgical Service in Hospitals."

These three papers were discussed by Drs. Robert L. Dickinson, Brooklyn, N. Y.; C. H. Magee, Burlington, Iowa; John A. Hornsby, Chicago; H. T. Sutton, Zanesville, Ohio, and J. M. T. Finney, Baltimore.

Dr. J. L. Yates, Milwaukee, Wis., read a paper by Dr. C. H. Bunting, Madison, Wis., and himself entitled, "Hodgkin's Disease." Discussed by Drs. George W. Crile, Cleveland; A. J. Ochsner, Chicago; E. Wyllys Andrews, Chicago, and J. L. Yates, Milwaukee, Wis.

Dr. Randolph Winslow, Baltimore, read a paper entitled, "Penetrating Wounds of the Abdomen." Discussed by Drs. E. Laplace, Philadelphia; Cunningham Wilson, Birmingham, Ala.; Jacob Frank, Chicago; Clyde S. Ford, Major U. S. A.; F. N. McRae, Atlanta, Ga.; W. L. Rodman, Philadelphia, and R. Winslow, Baltimore.

SECTION ON OBSTETRICS, GYNECOLOGY AND ABDOMINAL SURGERY

Tuesday, June 23—Afternoon

The meeting was called to order by the Chairman, Dr. E. Gustav Zinke, Cincinnati.

Dr. Zinke then read the Chairman's address entitled "A Few Important but Unsolved Problems in Obstetrics, Gynecology and Abdominal Surgery."

Dr. Edward J. Ill, Newark, read a paper on "The Treatment of the Albuminuria of Pregnancy."

Dr. A. J. Rongy, New York, read a paper on "The Treatment of the Toxemias of Pregnancy."

These two papers were discussed by Drs. Asa B. Davis, New York; Philip Marvel, Atlantic City, N. J.; M. Howard Fussell, Philadelphia; Charles S. Bacon, Chicago; Joseph B. DeLee, Chicago; Charles L. Bonifield, Cincinnati; Edward J. Ill, Newark, and A. J. Rongy, New York.

Dr. Edward P. Davis, Philadelphia, read a paper on "The Treatment of Placenta Praevia."

Dr. John B. Deaver, Philadelphia, read a paper on "Hysterotomy."

These two papers were discussed by Drs. Richard C. Norris, Philadelphia; George M. Boyd, Philadelphia; Damon B. Pfeiffer, Philadelphia; John O. Polak, Brooklyn; John M. Fisher, Philadelphia; A. J. Rongy, New York; Joseph B. DeLee, Chicago; Swithin Chandler, Philadelphia; E. P. Davis, Philadelphia, and John B. Deaver, Philadelphia.

Wednesday, June 24—Morning

Dr. Henry O. Marcy, Boston, read a paper on "Vesicovaginal and Rectovaginal Fistulas." Discussed by Drs. J. Wesley Bovée, Washington, and Henry O. Marcy, Boston.

Dr. Thomas S. Cullen, Baltimore, read a paper on "The Embryology of the Umbilical Region" (lantern demonstration). Discussed by Drs. Henry O. Marcy, Boston, and Thomas S. Cullen, Baltimore.

The following papers were read as a Symposium on Surgery of the Large Intestine:

Dr. Arthur E. Hertzler, Kansas City, Mo.: "The Pathogenesis of the Pericolic Membranes." (Lantern demonstration.)

Dr. Joseph Rilus Eastman, Indianapolis: "Experimental and Clinical Studies of Colon Stasis." (Lantern demonstration.)

Dr. Charles L. Bonifield, Cincinnati: "The Condition of a Few Patients Two Years After Ileosigmoidostomy."

Dr. W. J. Mayo, Rochester, Minn.: "Resection of the First Portion of the Large Intestine and the Resulting Effect on Its Function." (The paper was read by Dr. Charles H. Mayo.)

Dr. Charles A. L. Reed, Cincinnati: "Some Surgical Phases of the Sigmoid." (Lantern demonstration.)

These five papers were discussed by Drs. M. L. Harris, Chicago; Joseph Sailer, Philadelphia; John H. Gibbon, Philadelphia; John B. Deaver, Philadelphia; H. Pantzer, Indianapolis; Rosalie S. Morton, New York; J. W. Long, Greensboro, N. C.; Frank C. Yeoman, New York; Robert T. Morris, New York; Thomas S. Cullen, Baltimore; J. M. Lynch, New York; Henry O. Marcy, Boston; Joseph Rilus Eastman, Indianapolis; Charles L. Bonifield, Cincinnati; Charles H. Mayo, Rochester, and Charles A. L. Reed, Cincinnati.

Wednesday, June 24—Afternoon

A joint meeting was held with the Section on Pathology and Physiology.

The following papers were read as a Symposium on Specific and Protective Ferments:

Prof. Emil Abderhalden, Halle, Germany: "The Present Status of the Investigation." (In the absence of the author the paper was read by Prof. A. J. Carlson, Chicago.)

Dr. Victor Vaughan, Ann Arbor: "Parenteral Protein Digestion."

Dr. Chester M. Echols, Milwaukee: "Limitations of the Dialysis Method as a Practical Test for Pregnancy."

Dr. Henry Schwarz, St. Louis: "The Value of Abderhalden's Biologic Reaction to the Obstetrician and Gynecologist."

These four papers were discussed by Drs. Herman J. Boldt, New York; Charles S. Bacon, Chicago; Philip Williams, Philadelphia; F. H. Falls, Chicago; Charles Goodman, New York; Michael G. Wohl, Philadelphia; Clarence F. Ball, Rutland, Vt.; O. Lowry, Newark, N. J.; A. J. Carlson, Chicago, and Henry Schwarz, St. Louis.

Thursday, June 25—Morning

The following officers were nominated and elected: Chairman, Dr. Thomas S. Cullen, Baltimore; Vice-Chairman, Dr. George B. Somers, San Francisco; Secretary, Dr. Brooke M. Anspach, Philadelphia; Delegate, Dr. Channing W. Barrett, Chicago; Alternate Delegate, Dr. Henry Schwarz, St. Louis.

The Committee on Nomenclature of Operations reported that it had received a large number of suggestions which were being modified, and asked the active interest of the Section in its work. Discussed by Drs. Boldt and Dickinson.

Dr. Floyd E. Keene read a paper by himself and Dr. Henry K. Pancoast, Philadelphia, on "The Present Status of Pyelography." (Lantern demonstration.) Discussed by Drs. W. F. Braasch, Rochester, Minn.; Henry Dawson Furniss, New York; D. L. Eisendrath, Chicago; Arthur E. Hertzler, Kansas City; John G. Clark, Philadelphia, and Henry K. Pancoast, Bala, Pa.

Dr. Willard Bartlett, St. Louis, read a paper on "Personal Experience With Exclusion of the Pylorus in the Treatment of Ulcer." Discussed by Drs. William L. Rodman, Philadelphia; W. D. Haggard, Nashville, W. J. Jones, Chicago, and Willard Bartlett, St. Louis.

Dr. C. E. Ruth, Des Moines, Iowa, read a paper on "Common Errors in Gall-Tract Surgery." Discussed by Drs. Frederick Cotton, Boston; Edward Martin, Philadelphia; Philander Harris, Paterson, N. J.; D. N. Eisendrath, Chicago; J. H. Carstens, Detroit; John A. McGlinn, Philadelphia; F. B. Gray, Jersey City; Channing W. Barrett, Chicago; C. E. Ruth, Des Moines, Iowa.

Dr. Angus McLean, Detroit, read a paper on "Thrombosis and Emboli: Their Significance and Consequences in Abdominal Pelvic Surgery." No discussion.

Dr. Robert L. Dickinson, Brooklyn, read a paper on "Standardization of Surgery; the Attack on the Problem." No discussion.

Dr. William Edgar Darnall, Atlantic City, read a paper on "Pelvic Varicosities: A Definite Symptom-Complex." Discussed by Drs. Laura Branson, Iowa City, Iowa; J. H. Carstens, Detroit; S. M. Miller, Peoria, Ill.; Hugo Pantzer, Indianapolis; Swithin Chandler, Philadelphia; E. Gustav Zinke, Cincinnati, and William Edgar Darnall, Atlantic City.

Thursday, June 25—Afternoon

The following papers were read as a Symposium on Uterine Hemorrhage:

Dr. Emil Novak, Baltimore: "The Pathologic Physiology of Uterine Bleeding."

Dr. John G. Clark, Philadelphia: "Physiologic and Pathologic Variations of the Generative Organs Causing Atypical Bleeding; Diagnostic Aspects."

Dr. Howard A. Kelly, Baltimore: "Radium Treatment of terine Hemorrhage."

Dr. George E. Pfahler, Philadelphia: "Roentgen Therapy in Uterine Hemorrhage."

These four papers were discussed by Drs. C. C. Norris, Philadelphia; John A. McGlinn, Philadelphia; W. S. Newcomet, Philadelphia; Stephen E. Tracy, Philadelphia; Curtis Burnham, Baltimore; George Erety Shoemaker, Philadelphia; George C. Johnston, Pittsburgh; Emil Novak, Baltimore; John M. Fisher, Philadelphia; Howard A. Kelly, Baltimore, and George E. Pfahler, Philadelphia.

Dr. Albert Goldspohn, Chicago, read a paper on "Fundamental Intrapelvic Perineorrhaphy."

Dr. Frederick C. Holden, New York, read a paper on "Potent Factors in Failure of Operations for Retrodisplacement of the Uterus."

These two papers were discussed by Drs. George R. White, Savannah, Ga.; H. Grad, New York; John M. Fisher, Philadelphia; C. M. Echols, Milwaukee; John A. McGlinn, Philadelphia; Channing W. Barrett; Chicago; Brooke M. Anspach, Philadelphia; Albert Goldspohn, Chicago, and Frederick C. Holden, New York.

SECTION ON OPHTHALMOLOGY

Tuesday, June 23—Afternoon

The meeting was called to order by Dr. F. C. Todd, Chairman.

Dr. Joseph E. Willetts, Pittsburgh, called to the attention of the Section and read the report and resolutions of the committee of the Pennsylvania State Medical Society on medical expert testimony. It was moved and seconded that the Section endorse and approve the report and resolutions and that they be forwarded to the House of Delegates for consideration by that body on Wednesday. The motion carried. The resolutions and report will be found in the proceedings of the House of Delegates.

Dr. Todd read the Chairman's Address.

Dr. W. Gordon M. Byers, Montreal, read a paper on "Tumors of the Optic Nerve." Discussed by Drs. Marcus Feingold, New Orleans; G. E. de Schweinitz, Philadelphia; Edward Jackson, Denver; W. C. Posey, Philadelphia; John E. Weeks, New York; Walter R. Parker, Detroit; John O. McReynolds, Dallas, Tex.; Melancthon Foster, New Rochelle, N. Y., and W. Gordon M. Byers, Montreal.

Dr. Ward A. Holden, New York, read a paper on "Ocular Manifestations of the Toxemia of Pregnancy: Clinical Report of a Case." Discussed by Drs. R. L. Randolph, Baltimore; James Bordley, Jr., Baltimore; Allen Greenwood, Boston, and Dr. Ward A. Holden, New York.

Dr. Lee Masten Francis, Buffalo, read a paper on "Two Cases of Acute Retrobulbar Neuritis Associated with Marked Acetonuria." Discussed by Drs. G. E. de Schweinitz, Philadelphia; W. Reber, Philadelphia, and L. M. Francis, Buffalo.

Dr. F. H. Verhoeff, Boston, read a paper on "Chronic Ocular Tuberculosis: Necropsy Findings in a Case of Tuberculosis of the Hypophysis Cerebri." Discussed by Drs. Ervin Török, New York; M. Schoenberg, New York; E. V. L. Brown, Chicago; R. L. Randolph, Baltimore, and F. H. Verhoeff, Boston.

Wednesday, June 24—Morning

In the absence of Dr. Adolf Alt, St. Louis, a member of the Executive Committee, Dr. W. C. Posey, Philadelphia, was appointed on that committee.

There was an exhibition of New Instruments, Appliances, etc.

Dr. Edward Jackson, Denver, exhibited and distributed test cards for the determination of refraction.

Dr. Charles H. May, New York, exhibited a new electric ophthalmoscope with a battery handle in which, he asserted, he made use of a new principle.

Dr. S. Lewis Ziegler, Philadelphia, also exhibited an improvement on his electric ophthalmoscope previously exhibited to the Section; a light for transillumination, and one with a minute point of powerful light for use in the Wernicke test; a test stand and set of cards to show the special illumination; a small stand for short range work in cases of much-lowered vision in which it is necessary to start with such a short range as 5 feet; a stand for test cards with a light so arranged that each line of letters on the card receives the same amount of illumination. Below was a set of correct cards for testing muscle balance.

Dr. D. W. Wells, Boston, exhibited an instrument in the form of a two-tined fork with very sharp points for fixation of the conjunctiva and sclera in inserting a suture.

Dr. Walter Baer Weidler, New York, exhibited a set of lacrimal probes with sharp and dull dilators.

Dr. Walter B. Lancaster, Boston, exhibited instruments for testing the strength of magnets used in extracting metal bodies from the eye.

Dr. Lucien Howe, Buffalo, described a method of making sections of the connective tissue of the orbit, especially in relation to the insertion of the muscles.

Dr. M. Feingold, New Orleans, read a description of a dry celloidin method of making sections of the whole eye, and exhibited the methods with a microtome.

Dr. Clifton M. Miller, Richmond, Va., related a case of glaucoma in an old woman in which the eye was finally removed and sections showed in the upper part hemorrhage going into the anterior chamber, dislocating the lens and entirely separating the retina, which lay at the lower part of the sections exhibited by Dr. Miller. Later the patient presented beginning glaucoma in the other eye. The blood-pressure was found to be 200, which under rest and the administration of nitrites dropped to 176. He concluded not to operate on the second eye, as the patient had 20/30 vision under the use of physostigmin (eserin). Gradually the blood-pressure dropped to 172.

Dr. Melville Black, Denver, member of the House of Delegates, asked for an expression of the sentiment of the Section on the question of printing the entire transactions of the Section in a special number of The Journal as was done last year, in order that he might present the matter to the House of Delegates.

It was moved that the delegate be instructed to use his best efforts to have the papers of the Section on Ophthalmology published in the regular way instead of in a special number of The Journal. This motion carried.

Dr. Carl Fisher, Rochester, Minn., read a paper on "Epithelioma of the Lids." Discussed by Drs. Edwin E. Jack, Boston; Edward Jackson, Denver; S. D. Risley, Philadelphia; William L. Clark, Philadelphia; E. J. Bernstein, Kalamazoo, and Carl Fisher, Rochester, Minn.

Dr. F. Phinizy Calhoun, Atlanta, Ga., read a paper on "Hereditary Glaucoma (Simplex): the Report, with Operative Notes, of Three Generations of One Family."

Dr. Walter R. Parker, Detroit, read a paper on "Sclerocorneal Trephining for Glaucoma."

Dr. E. V. L. Brown, Chicago, read a paper on "Late Infection Following a Trephining for Glaucoma."

Dr. William Campbell Posey, Philadelphia, read a paper on "Value of Miotics in Chronic Glaucoma."

These four papers were discussed by Drs. Hiram Woods, Baltimore; John E. Weeks, New York; F. E. Cheney, Boston; W. E. Gamble, Chicago; Walter L. Pyle, Philadelphia; John Green, Jr., St. Louis; Lucien Howe, Buffalo; G. E.

de Schweinitz, Philadelphia; Melville Black, Denver; M. H. Lebensohn, Chicago; W. Gordon M. Byers, Montreal; Allen Greenwood, Boston; E. C. Ellett, Memphis; L. W. Fox, Philadelphia; W. E. Lambert, New York; F. Phinizy Calhoun, Atlanta, Ga.; W. R. Parker, Detroit; E. V. L. Brown, Chicago, and W. C. Posey, Philadelphia.

WEDNESDAY, JUNE 24—AFTERNOON

Dr. C. H. Williams, Boston, demonstrated an "anomaloscope" and a modification of a lantern to which he had added smoked glasses to obtain an intensification of colors.

Dr. Clifford B. Walker, Boston, demonstrated his instrument for the determination of the hemiopic pupillary reaction.

Dr. Nelson M. Black, Milwaukee, gave a demonstration on the standardization of signals in railway and other service, showing the effect of different colors and tints of glass in cutting out the ultraviolet rays of the spectrum or in intensifying or diminishing the light of signal-lamps.

Dr. J. Ellis Jennings, St. Louis, demonstrated a self-recording test for color-blindness.

Dr. Edward Jackson, Denver, read the report of the Committee on Education in Ophthalmology. The report will be found in the bound volume of the *Transactions* of the Section. Discussion and action on the report on motion of Dr. Jackson took place at the executive session Thursday morning.

Dr. Alexander Duane, New York, read a paper on "Convergence Insufficiency." Discussed by Drs. William N. Souter, Portsmouth, N. H.; Francis Valk, New York; D. W. Wells, Boston; Oscar Wilkinson, Washington, D. C.; George H. Price, Nashville, Tenn.; Edward Jackson, Denver, and Alexander Duane, New York.

Dr. Samuel Theobald, Baltimore, read a paper on "The Etiology of Phlyctenular Ophthalmia: Is Tuberculosis Really as Important a Factor in the Causation of this Disease as Now Commonly Taught?" Discussed by Drs. W. E. Gamble, Chicago; A. E. Davis, New York; George H. Derby, Boston; Harry Vaughan, Morristown, N. J.; Richard J. Tivnen, Chicago; Walter Baer Weidler and Thomas H. Curtin, New York; William Tarun, Baltimore; Mark Stevenson, Akron, Ohio, and Samuel Theobald, Baltimore.

Dr. William Zentmayer, Philadelphia, read a paper on "A Study of the Effect of the Correction of Ametropia on Heterophoria, with a Consideration of Some Associated Conditions." Discussed by Drs. A. E. Davis, New York; Hiram Woods, Baltimore; Edward Jackson, Denver; Francis Valk, New York; Samuel Theobald, Baltimore; George H. Price, Nashville; W. H. Bates, New York; Otis Orendorff, Canon City, Colo.; Mark Stevenson, Akron, Ohio, and William Zentmayer, Philadelphia.

THURSDAY, JUNE 25—MORNING

Dr. Albert E. Bulson, Jr., Chairman, made the following report:

> The Executive Committee after due consideration has decided to recommend for your approval the following: for Chairman, E. C. Ellett, Memphis, Tenn.; for Vice-Chairman, John A. Donovan, Butte, Mont. This Section has relieved the Executive Committee of the responsibility of nominating a secretary, inasmuch as the present secretary has been elected for three years; but the Executive Committee feels that it would like to approve the work done by our very efficient secretary, Dr. George H. Derby. For delegate, Dr. Walter R. Parker, Detroit.
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> The Executive Committee in consideration of the recommendations in the Chairman's address has the following to offer:
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> We desire to approve and commend the recommendation of the Chairman for the establishment of teaching fellowships in the universities wherever suitable facilities exist, and we recommend that the plan be referred to the Council on Medical Education of the American Medical Association with the hearty endorsement of this Section.

On motion of Dr. S. D. Risley, Philadelphia, duly seconded, the report and recommendations of the Executive Committee were adopted.

The Chairman announced that three members of the Committee on Award under the provisions of the Knapp Testimonial Fund were to be elected. The following were nominated:

Dr. G. E. de Schweinitz, Philadelphia; Dr. E. V. L. Brown, Chicago; Dr. F. Phinizy Calhoun, Atlanta; Dr. S. D. Risley, Philadelphia; Dr. Hiram Woods, Baltimore.

Dr. Bulson called attention to the ineligibility for this committee of men who have papers before the Section this year. This ruled out Dr. E. V. L. Brown and Dr. F. Phinizy Calhoun.

Dr. W. C. Posey moved that the nominations be closed. Seconded and carried.

Dr. George H. Price moved that the Secretary cast the ballot of the Section for the three nominees, Drs. de Schweinitz, Risley and Wood. This motion carried and the men named were declared members of the Committee of Award of the Knapp Testimonial Fund.

The Chairman announced that the next order of business would be the report of the Knapp Testimonial Fund Committee, and Dr. A. E. Bulson, chairman of the committee in making the report said that there had been a hearty response to the request of the committee for contributions to the fund, and in the last three years the number of contributors had varied from 227 to 255. Most of the contributions were $5 and a few had contributed $10 or more. As is known, any contributor giving $5 or more gets the Year-Book, edited by Dr. Edward Jackson of Denver, and a copy of the bound *Transactions* of the Section. The subscription price of the Year-Book alone is $5 and there has been a considerable deficit connected with the publication of the volume, which Dr. Jackson has generously and uncomplainingly made up in addition to doing the large amount of work of compilation and editing. This it was felt should not continue, and inasmuch as Dr. Jackson had agreed to prepare the book for 1914, a plea was made that contributors should increase their subscriptions to the Knapp Fund to a sufficient amount to pay for the Year-Book and the bound *Transactions.* There was nothing compulsory about it, but next year the minimum subscription would be made $10. The work is invaluable to the ophthalmologist, and aside from the financial deficit which Dr. Jackson has made up, the fact that he was willing to undertake the work at all is worthy of great commendation. The money in the fund after the payment of sundry items of expense and the cost of striking off a new Knapp Fund medal, and some incidental expenses in connection with the publication of papers by men doing research who are unable to meet the charges made by the Association, will be paid to Dr. Jackson. So that the Knapp Testimonial Fund is serving a very useful purpose in promoting research work and also in furthering the interests of the Section.

Dr. Edward Jackson, Denver, presented the report of the Committee on Award, as follows:

> The members of the committee, each separately, examined the papers presented at the last annual meeting of this Section and each independently arrived at the conclusion that among those papers was one worthy of the prize. There were other papers that had to be carefully considered in competition with it. But we fully united in the conclusion that this paper dealt with an important matter, judiciously reviewed the preceding literature, met by ingenious experiment the difficulties that beset the subject, recorded original observations of worth and importance, and so brought light where before had been uncertainty and confusion. For these reasons we recommend the award of the medal for the paper on the "Topical Diagnostic of the Hemiopic Pupillary Reaction and the Wilbrand Hemianopic Prism Phenomenon with a New Method of Performing the Latter," by Clifford B. Walker of Boston.
>
> EDWARD JACKSON,
> JOHN E. WEEKS,
> CASEY A. WOOD.

The chairman of the Knapp Testimonial Fund Committee Dr. A. E. Bulson, Jr., then, at the request of the Chairman of the Section, presented the medal to Dr. Walker.

Dr. C. H. Williams, Boston, chairman, read the report of the Committee on Color Standards, which will appear in the *Transactions* of the Section.

It was moved that the report of the Committee on Color Vision be accepted and the committee continued for another year, with instructions to report at the next meeting of the section a standard form of instructions for the examination of the color-sense and a standard blank for recording the results of these tests.

The motion was stated and carried in the foregoing form.

Dr. Hiram Woods, Baltimore, read the report of the Committee on Optometry, of which committee Dr. W. H. Wilder was chairman, and wrote the report. The last clause of this report or recommendation was written by Dr. Wilder, but was not concurred in by the other members of the committee. The members of the committee were Edgar Thomson, New York, E. C. Ellett, Memphis, John Green, Jr., St. Louis, Hiram Woods, Baltimore, and William H. Wilder, Chicago, chairman.

Dr. Edward Jackson moved that the report be accepted and adopted by this Section. The motion was seconded.

Dr. John Green, Jr., wished to amend the motion to the effect that the report be accepted with the omission of the last sentence.

Dr. Jackson accepted the amendment and the motion as amended carried.

The chairman called up for discussion and action the report of the Committee on Education in Ophthalmology read in the section Wednesday.

In order to get the question before the house, Dr. G. E. de chweinitz moved that the report be adopted as read as expressing the sentiment of the Section, and at the suggestion of the chairman the motion was made to include the continuance of the committee. After considerable discussion the motion carried.

Dr. George H. Derby, Secretary, called up the point as to whether the Committee on Optometry was to be continued or discharged.

Dr. Hiram Woods moved that the committee be discharged. Seconded and carried.

The chairman called up the report of the Committee on Conservation of Vision. He explained that the report had gone to the House of Delegates as the committee was a committee of the American Medical Association, and in the absence of Dr. Frank Allport, chairman, Dr. Hiram Woods was asked to discuss the report. He stated the substance of the report and described the work of the Council on Health and Public Instruction in the way of the distribution of about twenty pamphlets whose subjects and authors he named, the conduct of a newspaper campaign, etc.

Dr. Woods moved that the report of Dr. Allport be accepted and that the secretary of the section be requested to obtain a copy from the House of Delegates for publication in the *Transactions* of the Section. Seconded and carried.

Dr. Homer E. Smith, Norwich, N. Y., read a paper on "Safe and Speedy Extraction of the Immature Cataractous Lens Following Preliminary Capsulotomy." Discussed by Drs. S. D. Risley, Philadelphia; Hiram Woods, Baltimore; Allen Greenwood, Boston; W. E. Lambert, New York; M. Feingold, New Orleans; Otis Orendorff, Canon City, Colo.; John Green, Jr., St. Louis; W. M. Sweet, Philadelphia; F. C. Todd, Minneapolis; Melville Black, Denver, and Homer Smith, Norwich, N. Y.

Dr. J. W. Jervey, Greenville, S. C., read a paper on "The Influence of Hookworm Disease on the Eyes; A Study of Fifty-Three Cases." Discussed by Drs. Charles W. Kollock, Charleston, S. C.; F. Phinizy Calhoun, Atlanta, Ga., and J. W. Jervey, Greenville, S. C.

Dr. Edward Jackson, Denver, read a paper on "International Standard for Testing Vision, and Standardizing other Visual Tests." Discussed by Drs. Nelson M. Black, Milwaukee, and Edward Jackson, Denver.

Dr. Edward Jackson, Denver, moved that the Section appoint a committee on standardizing test cards, the committee to be appointed by the chair. Seconded and carried.

Dr. S. Lewis Ziegler, Philadelphia, read a paper on "Trefoil Keratectomy." Discussed by Drs. John Green, Jr., St. Louis; John E. Virden, New York, and S. Lewis Ziegler, Philadelphia.

Thursday, June 25—Afternoon

Dr. Clifford B. Walker, Boston, read a paper on "Further Observations on the Hemiopic Pupillary Reaction Obtained with a New Clinical Instrument." Discussed by Dr. Walter B. Lancaster, Boston.

Drs. H. H. Tyson and M. J. Schoenberg, New York, read a paper on "Experimental Researches in Methyl Alcohol Inhalation." Discussed by Drs. Ward A. Holden, New York; Hiram Woods, Baltimore; Edgar B. Burchell, New York, and M. J. Schoenberg, New York.

Dr. Edward Stieren, Pittsburgh, read a paper on "Enucleation with Transplantation of Fat into the Orbit." Discussed by Drs. John A. Donovan, Butte; John Green, Jr., St. Louis; W. E. Lambert, New York, and Edward B. Heckel and Edward Stieren, Pittsburgh.

Dr. Walter B. Weidler, New York, gave a lantern demonstration and description of sarcomas. No discussion.

Dr. E. C. Ellett, Memphis, Tenn., gave a description and "Demonstration of the Action of Trephining on Rabbits' Eyes." No discussion.

Dr. F. C. Todd, the retiring Chairman, presented a gavel to the section on which he proposes to have engraved the names of past chairmen of the Section, and that of the Chairman-Elect, Dr. E. C. Ellett. He was thanked by the new chairman.

Dr. G. E. de Schweinitz moved a vote of thanks to the retiring chairman for his tactful and judicial conduct of the business of the meeting, to the secretary for efficient work and to the committee of arrangements for their efforts. It was taken by consent.

Dr. Hiram Woods moved a rising vote of thanks to Dr. Todd for the gavel presented to the section.

SECTION ON DISEASES OF CHILDREN

Tuesday, June 23—Afternoon

The meeting was called to order by the Chairman, Dr. F. S. Churchill of Chicago. The Chairman expressed his appreciation of the honor conferred on him by his selection as Chairman, and welcomed the members of the Section.

Dr. A. W. Myers, Milwaukee, Wis., read a paper on "Some Practical Breast-Milk Problems."

Dr. Frank C. Neff, Kansas City, read a paper on "The Feeding of Skimmed Breast-Milk."

These two papers were discussed by Drs. John Zahorsky, St. Louis; Charles Douglas, Detroit; H. Lowenburg, Philadelphia; John Lovett Morse, Boston, and A. W. Myers, Milwaukee, Wis.

In the absence of Dr. Abt, Chicago, the chair appointed Dr. R. M. Smith, Boston, to serve in his place.

Dr. H. M. McClanahan, Omaha, Neb., read a paper on the "Care of Delicate and Premature Children in the Home." Discussed by Drs. Henry D. Chapin, New York; John Zahorsky, St. Louis; L. R. DeBuys, New Orleans; S. M. Hamill, Philadelphia; F. B. Talbot, Boston; F. N. Rogers, Manchester, N. H.; Henry F. Helmholz, Chicago, and H. M. McClanahan, Omaha.

Dr. Henry Dwight Chapin, Boston, read a paper on "The Physician's Function in Infant-Feeding." No discussion.

Wednesday, June 24—Morning

Dr. Henry Heiman, New York, read a paper on "Refractory or So-Called 'Fast' Cases of Meningococcus Meningitis." Discussed by Drs. H. Lowenburg, Philadelphia; Roger H. Dennett, New York; John Zahorsky, St. Louis; John Lovett Morse, Boston; J. L. Hirsh, Baltimore, and Henry Heiman, New York.

Dr. Rowland Godfrey Freeman, New York, read a paper on "Urinary Analysis in the Diagnosis and Treatment of Infancy and Childhood." Discussed by Drs. J. P. Sedgwick, Minneapolis; S. M. Hamill, Philadelphia; Joseph L. Linde, New Haven, Conn.; Henry F. Helmholz, Chicago; Butterworth, Chicago; Henry Heiman, New York; Kate C. Meade, Middletown, Conn., and Rowland G. Freeman, New York.

Dr. L. R. DeBuys, New Orleans, read a paper on "Amebic Dysentery in Children." Discussed by Drs. Thomas S. Southworth, New York; Henry D. Chapin, New York; John W. Amesse, Denver; Butterworth, Chicago, and L. R. DeBuys, New Orleans.

Dr. Alfred S. Hess, New York, read a paper on "The Use of a Series of Vaccines in the Prophylaxis and Treatment of an Epidemic of Pertussis." Discussed by Drs. John Zahorsky, St. Louis; T. C. McCleave, Berkeley, Cal.; S. M. Hamill, Philadelphia; D. L. Richardson, Providence, R. I.; Kate C. Meade, Middletown, Conn.; Reimer, New York;

Henry Heiman, New York; H. Lowenburg, Philadelphia, and Alfred S. Hess, New York.

Dr. R. M. Smith, Boston, read a paper on "The Examination of the Chest in Children." Discussed by Drs. Henry Heiman, New York; Rowland Freeman, New York; S. M. Hamill, Philadelphia; H. M. McClanahan, Omaha, Neb.; Henry Dwight Chapin, New York; John Zahorsky, St. Louis, and R. M. Smith, Boston.

Wednesday, June 24—Afternoon

Dr. Roger H. Dennett, New York, read a paper entitled "The Use of Boiled Milk in Infant-Feeding."

Dr. Jerome S. Leopold, New York, read a paper on "Experiences with Whey-Modified Milk in Infant-Feeding."

These two papers were discussed by Drs. Frank C. Neff, Kansas City, Mo.; L. T. Royster, Norfolk, Va.; H. Lowenburg, Philadelphia; Charles Douglas, Detroit; G. D. Scott, New York; John Zahorsky, St. Louis; G. W. Graves, New York; John Lovett Morse, Boston; Roger H. Dennett, New York, and Jerome S. Leopold, New York.

Dr. John Zahorsky, St. Louis, read a paper on "Experiments with Swine-Fat in Infant-Feeding."

Dr. F. W. Schultz, Minneapolis, read a paper on "The Absorption of Fat from the Intestinal Tract of the Actively Tuberculous Child." Discussed by Drs. F. B. Talbot, Boston; John Zahorsky, St. Louis, and F. W. Schultz, Minneapolis.

Dr. Thomas S. Southworth, New York, read a paper on "The Influence of Starch on Infant Digestion."

Dr. F. B. Talbot, Boston, read a paper on "The Metabolism of Carbohydrates with Special Reference to Its Effect on the Absorption of Fat and Nitrogen and on the Retention of Salts."

These two papers were discussed by Drs. Charles Douglas, Detroit; J. L. Morse, Boston; John Zahorsky, St. Louis; J. F. Sinclair, Philadelphia; H. M. McClanahan, Omaha, Neb.; H. F. Helmholz, Chicago; Thomas S. Southworth, New York, and F. B. Talbot, Boston.

Thursday, June 25—Morning

The following were nominated and elected as officers for the ensuing year: Chairman, Dr. L. T. Royster, Norfolk, Va.; Vice-Chairman, Dr. A. W. Myers, Milwaukee; Secretary, Dr. F. P. Gengenbach, Denver; Delegate, Dr. T. C. McCleave, Berkeley, Cal.; Alternate, Dr. F. C. Neff, Kansas City, Mo.

Dr. C. F. Judson, Philadelphia, read a paper on "Blood-Pressure in Normal Children."

Dr. John Lovett Morse, Boston, read a paper entitled "A Study of the Blood-Pressure in Anemia in Infancy." Discussed by Drs. May Michael, Chicago; R. Hill, Philadelphia; L. F. Bishop, New York; John Ritter, Chicago; S. M. Hamill, Philadelphia; C. F. Judson, Philadelphia, and J. L. Morse, Boston.

Dr. C. H. Dunn, Boston, read a paper on "A contribution to the Diagnosis and Prognosis of Congenital Cardiac Disease." Discussed by Drs. F. W. Schultz, Minneapolis; H. F. Helmholz, Chicago; John Zahorsky, St. Louis; L. T. Bishop, New York; Allen, Holyoke, Mass.; J. P. Sedgwick, Minneapolis; J. L. Morse, Boston, and C. H. Dunn, Boston.

Dr. Henry F. Helmholz, Chicago, read a paper on "Further Observations Concerning the Relation of Heat to Infant Mortality." Discussed by Drs. L. T. Royster, Norfolk, Va.; Julius Levy, Newark, N. J.; R. M. Smith, Boston; Charles Douglas, Detroit; W. W. Butterworth, New Orleans; S. M. Burton, Albuquerque, N. Mex.; Ilway, New York; L. W. Elias, Asheville, N. C.; T. C. McCleave, Berkeley, Cal., and H. F. Helmholz, Chicago.

Dr. H. Lowenburg, Philadelphia, read a paper on "A Further Clinical Study of the Efficiency of Sodium Chlorid in the Therapeutics of Bright's Disease." Discussed by Drs. Julius Levy, Newark, N. J.; Thomas S. Southworth, New York; John Zahorsky, St. Louis; Percival Nicholson, Ardmore, Pa., and H. Lowenburg, Philadelphia.

Dr. Julius H. Comroe, York, Pa., read a paper on "The Use and Abuse of the Tonsils." Discussed by Drs. John Zahorsky, St. Louis; Thomas S. Southworth, New York, and J. H. Comroe, York, Pa.

Thursday, June 25—Afternoon

Dr. T. C. McCleave, Berkeley, Cal., read a paper on "The Relation of Bovine Tuberculosis to Early Tuberculosis in Childhood." Discussed by Drs. P. L. Coit, Trenton, N. J.; John Ritter, Chicago; Julius Levy, Newark, N. J.; R. M. Smith, Boston; H. F. Helmholz, Chicago; Charles Douglas, Detroit, and T. C. McCleave, Berkeley, Cal.

Dr. E. A. Park, Baltimore, read a paper on "Thoracic Complications of Rickets." Discussed by Drs. Maurice Ostheimer, Philadelphia; J. Howland, Baltimore; H. T. Price, Pittsburgh; J. H. McKee, Philadelphia, and E. A. Park, Baltimore.

Dr. Maurice Ostheimer, Philadelphia, read a paper on "Fragilitas Ossium." Discussed by Drs. E. A. Park, Baltimore; F. A. Conlon, Lawrence, Mass., and Maurice Ostheimer, Philadelphia.

F. X. Walls, Chicago, read a paper on "Treatment of Inguinal Hernia in Infants." No discussion.

After the installation of officers, the chairman appointed S. M. Hamill, Philadelphia, and F. S. Churchill, Chicago, a committee to look into the possibilities of increasing and improving the Section on Diseases of Children.

SECTION ON PHARMACOLOGY AND THERAPEUTICS

Tuesday, June 23—Afternoon

The meeting was called to order at 2:15 p. m., by the Chairman, Dr. John F. Anderson, Washington, D. C.

Dr. Anderson then read his Chairman's Address, entitled "Some Unhealthy Tendencies in Therapeutics." No discussion.

Dr. Cary Eggleston, New York, read a paper by Dr. Robert A. Hatcher, New York, and himself, entitled "Studies on the Absorption of Drugs." Discussed by Drs. Samuel James Meltzer, New York; Solomon Solis Cohen, Philadelphia, and Cary Eggleston, New York.

Dr. Ray L. Wilbur, San Francisco, read a paper on "The Therapeusis of Pericarditis." Discussed by Dr. Samuel James Meltzer, New York.

Dr. Lawrence Litchfield, Pittsburgh, read a paper on "The Abuse of Normal Salt Solution." Discussed by Drs. John F. Anderson, Washington, D. C.; Ray L. Wilbur, San Francisco; John A. Lichty, Pittsburgh, and Lawrence Litchfield, Pittsburgh.

Dr. L. H. Newburgh, Boston, read a paper on "Therapy of Cardiovascular Disturbances." Discussed by Drs. D. F. Johnson, Pittsburgh; Lawrence Litchfield, Pittsburgh; Bernard Fantus, Chicago; L. P. Hamburger, Baltimore; J. A. Williams, Chicago, and L. H. Newburgh, Boston.

Dr. J. H. Austin, Philadelphia, read a paper on "The Effects of Vapor Baths on the Total Non-Coagulable Nitrogen of the Blood in Nephritis." No discussion.

Wednesday, June 24—Afternoon

Dr. William S. Newcomet, Philadelphia, read a paper on "Radium and Roentgen Rays in Radiotherapy: Their Use and Limitations." Discussed by Dr. John F. Anderson, Washington, D. C.

Dr. George C. Johnston, Pittsburgh, read a paper on "The Place of the Roentgen Ray in Therapeutics." Discussed by Drs. Henry K. Pancoast, Bala, Pa.; Arthur F. Holding, New York; William Dwayne, Boston; A. L. Gray, Richmond, Va.; James W. Hunter, Norfolk, Va.; George E. Pfahler, Philadelphia; G. P. Massey, Philadelphia; William L. Clark, Philadelphia; George C. Johnston, Pittsburgh, and William S. Newcomet, Philadelphia.

Dr. A. D. Whiting, Philadelphia, read a paper on "Local Preparation of Patients for Operation." Discussed by Dr. Bastedo, New York. Dr. George P. Muller, Philadelphia, read a paper on "Postoperative Treatment of Surgical Cases."

Discussed by Drs. W. A. Bastedo, New York; A. P. Butt, Davis, W. Va.; R. A. Hatcher, New York; A. D. Whiting, Philadelphia; George P. Muller, Philadelphia; T. F. Riley, New York, and George Parker, Peoria, Ill.

Dr. George B. Roth, Washington, D. C., read a paper on "An Examination of Some Commercial Preparations of Pituitary Extract Made from the Posterior Lobe of the Pituitary Body." Discussed by Drs. Solomon Solis Cohen, Philadelphia; R. A. Hatcher, New York, and George B. Roth, Washington, D. C.

Mr. M. I. Wilbert, Washington, D. C., secretary, announced an application received from the secretary of the American *Pharmaceutical Association for pharmaceutical membership in* the American Medical Association. Mr. Wilbert moved that endorsement of the application for membership be made. Seconded by Dr. Solomon Solis Cohen, Philadelphia. Motion carried.

Thursday, June 25—Morning

The *Nominating Committee* for election of officers nominated the following officers, who were elected, the Secretary being instructed to cast the ballot for the nominees: Chairman, Dr. R. A. Hatcher, New York; Vice-Chairman, Dr. J. R. Arneil, Denver; Secretary, Mr. M. I. Wilbert, Washington, D. C.; Delegate, Dr. John F. Anderson, Washington, D. C.; Alternate, Dr. Ray L. Wilbur, San Francisco.

The following papers were read as a Symposium on the Prevention and Treatment of Diphtheria:

Dr. William H. Park, New York: "Active Immunization in Diphtheria by Toxin-Antitoxin Mixtures."

Dr. Samuel S. Woody, Philadelphia: "The Use of Diphtheria Antitoxin in the Treatment of Diphtheria."

These two papers were *discussed by* Drs. Lewellys F. Barker, Baltimore; John F. Anderson, Washington, D. C.; P. S. Roy, Washington, D. C.; Guy L. Kiefer, Detroit; D. L. Richardson, Providence, R. I.; W. W. Tompkins, Charleston, W. Va.; J. J. Kinyoun, Washington, D. C.; William H. Park, New York, and Samuel S. Woody, Philadelphia.

The following papers were read as a Symposium on Diet in Typhoid Fever:

Dr. Lewellys F. Barker, Baltimore: "Diet in Typhoid Fever."

Dr. Warren Coleman, New York: "The Effects of Food on Metabolism in Typhoid Fever."

These two papers were discussed by Drs. Lawrence Litchfield, Pittsburgh; O. T. Osborne, New Haven, Conn.; Allan C. Eustis, New Orleans; Philip S. Roy, Washington, D. C.; Lewellys F. Barker, Baltimore, and Warren Coleman, New York.

Dr. Joseph L. Miller, Chicago, read a paper on "The Value of Salicylates in Acute Articular Rheumatism." Discussed by Drs. Warren Coleman, New York; Lawrence Litchfield, Pittsburgh; Bernard Fantus, Chicago, and Joseph L. Miller, Chicago.

Dr. William Salant, Washington, D. C., read a paper on "The Pharmacology of Sodium Tartrate." No discussion.

Thursday, June 25—Afternoon

A joint meeting was held with the Section on Preventive Medicine and Public Health, at which papers were read in a Symposium on Pellagra. For the report of the proceedings, see the minutes of the Section on Preventive Medicine and Public Health.

SECTION ON PATHOLOGY AND PHYSIOLOGY

Tuesday, June 23—Afternoon

The meeting was called to order at 2:15 p. m. by the chairman, Dr. William Ophüls, San Francisco.

Dr. Ophüls then read his chairman's address, entitled "Anatomic Structure and Function." No discussion.

Dr. J. C. Friedman, New York, read a paper entitled "Experimental Chronic Gastric Ulcer." Discussed by Prof. A. J. Carlson, Chicago and Drs. E. C. Rosenow, Chicago, and J. C. Friedman, New York.

Dr. J. W. Draper, New York, presented "Studies on Duodenal Obstruction." Discussed by Dr. J. C. Bloodgood, Baltimore.

Dr. J. T. Case, Battle Creek, Mich., *read a paper entitled* "Roentgenographic Studies of the Function of the Ileocolic Valve." Discussed by Drs. Cole, New York; Walter B. Cannon, Boston; Prof A. J. Carlson, Chicago; A. C. Eustis, *New Orleans; Seymour Basch, New York;* E. C. Rosenow, Chicago; G. E. Pfahler, Philadelphia, and Thomas A. Groover, Washington, D. C.

Dr. F. M. Allen, New York, read a paper on "Studies in Experimental Diabetes." Discussed by Prof. A. J. Carlson, Chicago, and Dr. Eustis, New Orleans.

Prof. A. J. Carlson, Chicago, presented a paper entitled "Blood Transfusion in Pancreatic Diabetes." No discussion.

Dr. L. F. Watson, Oklahoma City, Okla., read a paper on "Urea and Quinin Injection in Goiter." No discussion.

Wednesday, June 24—Morning

A joint meeting was held with the Section on Practice of Medicine. For a report of the proceedings, see the minutes of that Section.

Wednesday, June 24—Afternoon

A joint meeting was held with the Section on Obstetrics, Gynecology and Abdominal Surgery. For a report of the proceedings, see the minutes of that Section.

Thursday, June 25—Morning

Meeting called to order by the Chairman, Dr. William Ophüls, San Francisco, at 9 a. m.

The following officers were nominated by the Nominating Committee and unanimously elected, the Secretary being instructed to cast the ballot: Chairman, Prof. A. J. Carlson, Chicago; Vice-Chairman, Dr. L. B. Wilson, Rochester, Minn.: Secretary, Dr. Frederick P. Gay, Berkeley, Cal.

Dr. L. D. Bulkley, New York, read a paper entitled "Relation of Diet to Cancer." *Discussed by Prof. A. J. Carlson*, Chicago.

Dr. Maude Slye, Chicago, presented a paper on "The Influence of Heredity on the Incidence of Cancer in Mice." Discussed by Drs. F. M. Baeslack, Detroit; L. D. Bulkley, New York; G. Ludn, Rochester, N. Y.; H. C. Schmeisser, Baltimore, and Prof. A. J. Carlson, Chicago.

Dr. C. F. Ball, Rutland, Vt., read a paper on "Abderhalden's Test in the Diagnosis of Cancer."

Dr. F. H. Falls, Chicago, read a paper on "A Study of the Ferment Activity of the Blood-Serum During Pregnancy and Under Normal Pathologic Conditions by the Abderhalden Method."

These two papers were discussed by Drs. Charles Goodman, New York, who presented a lantern-slide demonstration; M. G. Wohl, Philadelphia; C. P. McCord, Detroit; C. F. Ball, Rutland, Vt.; F. H. Falls, Chicago, and Prof. A. J. Carlson, Chicago.

Dr. D. S. D. Jessep, New York, presented "Adenomyoma of the Rectovaginal Septum." *No discussion.*

Dr. B. F. McGrath, Rochester, Minn., read a paper on "Carcinoma of the Prostate." No discussion.

Dr. C. P. McCord, Detroit, read a paper on "The Pineal Gland in Relation to Somatic, Sexual and Mental Development." No discussion.

Thursday, June 25—Afternoon

Dr. L. F. *Bishop, New York, read a paper on* "The Pathologic Physiology of Arteriosclerosis." Discussed by Dr. W. M. L. Coplin, Philadelphia.

Dr. G. B. Webb, Colorado Springs, read a paper on "Immunity in Tuberculosis." Discussed by Drs. William Ophüls, San Francisco, and G. B. Webb, Colorado Springs.

Dr. R. B. H. Gradwohl, St. Louis, read a paper on "The Hect-Weinberg Complement-Fixation Test as a Control Over the Wassermann." No discussion.

Dr. W. McKim Marriott, St. Louis, read a paper on "The Blood in Acidosis from the Quantitative Point of View." Discussed by Prof. A. J. Carlson, Chicago, and Dr. W McKim Marriott, St. Louis.

SECTION ON STOMATOLOGY

TUESDAY, JUNE 23—MORNING

The meeting was called to order at 2 p. m. by the Chairman, Dr. William C. Fisher, New York.

Dr. Talbot presented next the following list of proposals for membership to the Section: R. R. Johnson, Great Falls, Mont.; L. D. Idleton, Pendleton, Ore.; Leland Barrett, New York City; Weston A. Price, Cleveland, Ohio; Lieut. E. R. R. Ryan, U. S. Army; Lieut. F. L. K. Laflamme, U. S. Army; Lieut. George D. Graham, U. S. Army.

Dr. Moorehead moved that the list of applications for membership be referred to the House of Delegates for action.

Dr. Fisher then read the Chairman's address. Discussed by Drs. F. B. Moorehead, Chicago; J. S. Marshall, Berkeley, Cal.; H. L. Wheeler, New York; E. S. Talbot, Chicago; M. I. Schamberg, New York; G. V. I. Brown, Milwaukee, R. H. Ivy, Philadelphia; and W. C. Fisher, New York.

Dr. R. H. Ivy, Philadelphia, read a paper entitled "Mesothelial Tumors of the Jaw." Discussed by Drs. R. P. Bay, Baltimore; Virgil Loeb, St. Louis; M. I. Schamberg, New York; F. B. Moorehead, Chicago; C. K. Teter, Cleveland; T. L. Gilmer, Chicago; J. S. Marshall, Berkeley, Cal., and R. H. Ivy, Philadelphia.

Dr. T. L. McCurdy, Pittsburgh, read a paper entitled "Differential Diagnosis of Major Mouth Lesions."

Dr. Herbert L. Wheeler, New York, read a paper entitled "Methods of Obtaining Dental Service in Hospitals by the Appointment of Interns." Discussed by Drs. W. C. Fisher, New York; R. H. Ivy, Philadelphia; M. H. Cryer, Philadelphia; T. L. Gilmer, Chicago; M. I. Schamberg, New York; G. V. I. Brown, Milwaukee; A. D. Black, Chicago; T. F. Tholen, Los Angeles; E. A. Bogue, New York, and H. L. Wheeler, New York.

Dr. Fisher, the Chairman, appointed Dr. J. S. Marshall to take the place of Dr. McCurdy on the Executive Committee and also asked the Executive Committee to act as Nominating Committee.

WEDNESDAY, JUNE 24—MORNING

Dr. Talbot, the Secretary, presented two additional applications for membership, from Dr. B. C. Brown, Baltimore, and Dr. Cornelia B. Inglis, Swarthmore, Pa.

Dr. F. B. Moorehead, Chicago, moved that these names be added to the list presented on Tuesday to be sent to the House of Delegates for action.

Motion carried.

Dr. G. V. I. Brown, Milwaukee, read a paper entitled "The Section on Stomatology as a Factor in the Evolution of Dental and Medical Science." Discussed by Drs. Joseph Head, Philadelphia; F. B. Moorehead, Chicago; A. D. Black, Chicago; E. S. Talbot, Chicago; W. C. Fisher, New York; H. L. Wheeler, New York, and G. V. I. Brown, Milwaukee.

Dr. Frank Billings, Chicago, read a paper on "Mouth Infections as a Source of Systemic Disease."

Dr. T. L. Gilmer, Chicago, read a paper entitled "A Study of the Bacteriology of Alveolar Abscess."

These two papers were discussed by Drs. A. D. Black, Chicago; M. I. Schamberg, New York; V. P. Blair, St. Louis; Price; F. B. Moorehead, Chicago; W. C. Fisher, New York; J. S. Marshall, Los Angeles; G. V. I. Brown, Milwaukee; Frank Billings, Chicago, and T. L. Gilmer, Chicago.

WEDNESDAY, JUNE 24—AFTERNOON

Dr. A. H. Levings, Milwaukee, read a paper entitled "What Shall Be the Content for a Course in Oral Surgery in Our Dental Schools?" Discussed by Drs. F. B. Moorehead, Chicago; M. J. Schamberg, New York; J. A. Pettit, Portland, Ore.; V. P. Blair, St. Louis; M. H. Cryer, Philadelphia; J. G. Sharp, San Francisco; G. V. I. Brown, Milwaukee; T. L. Gilmer, Chicago; T. E. Carmody, Denver; A. D. Black, Chicago, and A. H. Levings, Milwaukee.

Dr. Virgil Loeb, St. Louis, read a paper entitled "Acute Parenchymatous Glossitis." Discussed by Drs. Gordon New, Rochester, Minn.; T. L. Gilmer, Chicago; F. B. Moorehead, Chicago; Bloom; M. J. Schamberg, New York; A. H. Levings, Milwaukee, and V. Loeb, St. Louis.

THURSDAY, JUNE 25—MORNING

The first order of business was the report of the Nominating Committee, as follows: Chairman, Dr. F. B. Moorehead, Chicago; Vice-Chairman, Arthur D. Black, Chicago; Secretary, Dr. Eugene S. Talbot, Chicago (two years); delegate to House of Delegates, Dr. G. V. I. Brown, Milwaukee.

Dr. Loeb moved that the Secretary be instructed to cast one ballot for the list of nominations. Motion carried.

The Secretary presented the name of Dr. S. Whitford Moore, Baltimore, for membership.

Dr. Moorehead moved that the name be held over until next year for action. Motion carried.

Dr. Gordon New, Rochester, Minn., read a paper on "Cystic Tumors of the Jaw." Discussed by Drs. F. B. Moorehead, Chicago; T. L. Gilmer, Chicago; M. I. Schamberg, New York; Bloom; C. K. Teter, Cleveland, and Gordon New, Rochester, Minn.

Dr. Joseph Head, Philadelphia, read a paper on "The Scientific Routine of Tooth-Brushing and Mouth-Cleansing." Discussed by Dr. William C. Fisher, New York.

Dr. Wayne W. Babcock, Philadelphia, read a paper entitled "Osteoplastic Surgery of the Face." Discussed by Drs. M. I. Schamberg, New York; H. S. Dunning, New York, and W. W. Babcock, Philadelphia.

Dr. H. S. Dunning, New York, read a paper on "Fractures of the Inferior Maxillary." Discussed by Drs. G. V. I. Brown, Milwaukee, Wis.; M. I. Schamberg, New York; Bloom; W. W. Babcock, Philadelphia, and H. S. Dunning, New York.

THURSDAY, JUNE 25—AFTERNOON

Dr. D. H. Squire, Buffalo, read a paper entitled "The Peridental Membrane as a Source of Infection."

Dr. Edward C. Rosenow, Chicago, read a paper on "Mouth Infection as a Source of Systemic Disease."

Dr. Charles T. Mayo, Rochester, Minn., read a paper on "Mouth Infection as a Source of Systemic Disease."

These three papers were discussed by Drs. Charles H. Mayo, Rochester, Minn.; W. O. Bridges, Omaha; Frauenthal, New York; T. W. Corwin, Newark, N. J.; W. K. Mercer, Pittsburgh, and M. I. Schamberg, New York.

Dr. C. B. Craig, New York, read a paper entitled "Mouth Infection in Relation to Nervous Infection." Discussed by Drs. M. I. Schamberg, New York; I. A. Pettit, Portland, Ore., and Bloom.

SECTION ON NERVOUS AND MENTAL DISEASES

TUESDAY, JUNE 23—AFTERNOON

The Section was called to order by the Chairman, Dr. W. W. Graves, St. Louis.

Dr. Graves then read the Chairman's Address, entitled "Some Factors Tending Toward Adequate Instruction in Nervous and Mental Diseases."

Discussed by Drs. Charles H. Hughes, St. Louis; George Dock, St. Louis; E. E. Southard, Boston; C. R. Woodson, St. Joseph, Mo.; Walter B. Swift, Boston; Charles R. Ball, St. Paul; Hugh T. Patrick, Chicago, and W. W. Graves, St. Louis.

Dr. N. S. Yawger, Philadelphia, read a paper on "Tuberous Sclerosis and Other Unusual Features in Epilepsy." Discussed by Drs. Alfred Gordon, Philadelphia; William G. Spiller, Philadelphia, and N. S. Yawger, Philadelphia.

Dr. H. H. Drysdale, Cleveland, read a paper on "Juvenile Psychosis: Report of a Case." Discussed by Drs. Walter B. Swift, Boston; Frank P. Norbury, Springfield, Ill.; C. R. Woodson, St. Joseph, Mo.; C. D. Crothers, Hartford, Conn.; Tom A. Williams, Washington, D. C.; Alfred Gordon, Philadelphia; J. T. Fisher, Los Angeles, and H. H. Drysdale, Cleveland.

Dr. Alfred Gordon, Philadelphia, read a paper on "Nervous and Mental Disturbances Following Castration in Women." Discussed by Drs. Walter B. Swift, Boston; Joseph M. Aikin, Omaha; Frank R. Starkey, Philadelphia; William M. Leszynsky, New York; Hugh T. Patrick, Chicago; Charles R. Ball, St. Paul; Charles H. Hughes, St. Louis and Alfred Gordon, Philadelphia.

Dr. William G. Spiller, Philadelphia, read a paper on "Acute Myelitis, Secondary to Perirectal Abscess, Developing a Few Hours After Severe Fright." Discussed by Drs. Hugh T. Patrick, Chicago; Frank P. Norbury, Springfield, Ill.; C. D. Camp, Ann Arbor, Mich.; Charles K. Mills, Philadelphia; E. E. Southard, Boston; Wilfred Harris, London, England; Walter B. Swift, Boston, and William G. Spiller, Philadelphia.

Wednesday, June 24—Morning

Dr. Edward D. Fisher, New York, read a paper on "Landry's Paralysis: Report of a Case with Necropsy." Discussed by Drs. Walter B. Swift, Boston, and Edward D. Fisher, New York.

Dr. A. C. Gillis, Baltimore, read a paper on "Occlusion of the Posterior-Inferior Cerebellar Artery: Report of Cases." Discussed by Drs. William G. Spiller, Philadelphia; Ernest . Hammes, St. Paul; Wilfred Harris, London, England, A. C. Gillis, Baltimore.

he Chairman announced the following to act as a Nomiting Committee: Drs. Hugh T. Patrick, Chicago; Edward D. Fisher, New York, and T. H. Weisenburg, Philadelphia. The committee was asked to make its recommendations Thursday morning.

Dr. Ernest M. Hammes, St. Paul, read a paper on "Results Following Seventy-Five Injections of Salvarsanized Serum." Discussed by Drs. C. Eugene Riggs and Ernest M. Hammes, St. Paul.

Dr. L. B. Pilsbury, Lincoln, Neb., read a paper on "A Brief Report on Cases of Paresis Treated by Intraspinal Injections of Salvarsanized Serum."

These two papers were discussed by Drs. Charles R. Ball, St. Paul; G. Wilse Robinson, Kansas City, Mo.; B. D. Lowery, Jackster, N. J.; H. F. Stoll, Hartford, Conn.; R. Harvey Cook, Oxford, Ohio; Frank R. Starkey, Philadelphia; W. W. Graves, St. Louis; C. R. Woodson, St. Joseph, Mo.; George P. Sanborn, Boston, and C. C. Wholey, Pittsburgh. The remainder of the discussion was postponed to the afternoon session.

The Section then adjourned and reconvened in the amphitheater of the Exposition building.

Dr. E. E. Southard, Boston, introduced a resolution, which will be found in the minutes of the House of Delegates, requesting the Council on Health and Public Instruction to consider and act on the advisability of: (*a*) including mental hygiene among the public health problems which said council is investigating; (*b*) taking steps to educate the public on all appropriate topics of mental hygiene, and (*c*) establishing a subcommittee on mental hygiene, empowered to confer and if desirable cooperate with official and voluntary organizations. [The House of Delegates referred this resolution to the Council on Health and Public Instruction.]

On motion, carried, Dr. Southard was instructed to present the resolution to the House of Delegates.

Dr. Charles K. Mills, Philadelphia, then presented a summary of his paper on "Cerebellar Symptoms and Localization," and Dr. T. H. Weisenburg, Philadelphia, gave a commentary on the lantern-slides and moving pictures illustrating the paper.

Dr. Isaac H. Jones, Philadelphia, presented a series of motion-pictures demonstrating the Vestibular Apparatus, Nystagmus and Barassy Pointing Reactions. Discussed by Drs. Harvey Cushing, Baltimore; Otfrid Foerster, Breslau, Germany; William G. Spiller, Philadelphia, and Charles K. Mills and T. H. Weisenburg, Philadelphia.

Wednesday, June 24—Afternoon

The discussion of papers by Drs. C. Eugene Riggs, Ernest M. Hammes, and L. B. Pilsbury, postponed from the morning session, was then resumed, Drs. Hammes and Pilsbury closing.

Dr. D. J. McCarthy, Philadelphia, read a paper on "Ankylosis of the Shoulder-Joint in Association with Brachial Neuritis and Pulmonary Lesion of the Right Lung." Discussed by Drs. Charles K. Mills, Philadelphia; John H. W. Rheim, Philadelphia; Tom A. Williams, Washington, D. C.; Hugh T. Patrick, Chicago, and D. J. McCarthy, Philadelphia.

The Chairman announced that Drs. J. T. Fisher, Los Angeles, and Morris J. Karpas, New York, were appointed members of the Executive Committee, to take the place of Drs. W. A. Jones, Minneapolis, and Edward D. Fisher, New York, who were absent.

Dr. Henry A. Cotton, Trenton, N. J., read a paper on "The Value of Early Diagnosis in Syphilis of the Central Nervous System: Its Relation to Treatment." Discussed by Drs. Tom A. Williams, Washington, D. C.; Ross Moore, Los Angeles; G. Wilse Robinson, Kansas City, Mo.; Charles R. Ball, St. Paul; George A. Moleen, Denver, and Henry A. Cotton, Trenton.

Dr. Otfrid Foerster, Breslau, Germany, read a paper on "The Borders of the Areas of Anesthesia, Analgesia and Thermo-Anesthesia in Lesions at Different Levels of the Sensory Tract." Discussed by Drs. Charles K. Mills, Philadelphia; Hugh T. Patrick, Chicago; W. W. Graves, St. Louis, and Otfrid Foerster, Breslau, Germany.

On motion by Dr. Hugh T. Patrick, Chicago, a vote of thanks was extended to Dr. Foerster for the presentation of his paper.

Dr. John H. W. Rheim, Philadelphia, read a paper on "Tumors of the Crus." No discussion.

Dr. Walter B. Swift, Boston, read a paper on "(I.) A New Method of Reflex Elicitation: Preliminary Note. (II). Further Analysis of the Voice Sign in Chorea." Discussed by Drs. J. T. Fisher, Los Angeles; W. W. Graves, St. Louis, and Walter B. Swift, Boston.

Thursday, June 25—Morning

The Chairman announced that as two members of the Nominating Committee had not arrived, election of officers would be postponed until later in the session.

Dr. Hugh T. Patrick, Chicago, moved that the Section nominate for Honorary Fellowship in the American Medical Association two distinguished foreign guests, Dr. Otfrid Foerster, Breslau, Germany, and Dr. Wilfred Harris, London, England, and that the Secretary be instructed immediately to communicate this action to the Secretary of the Association. Motion seconded and carried. It was so ordered.

The following papers were read as a symposium on the Problem of the Prevention of Nervous and Mental Diseases, in two parts: Part I:

Dr. James J. Putnam, Boston: "A Brief Summary and Analysis of the Work Done by Psychanalysts, with Reference to the Diagnosis and Treatment of the Psychoses; What Contribution can Psychanalysis Make Toward This End?"

Dr. Donald Gregg, Brookline, Mass: "Genetic Factors in One Hundred Cases of Psychoneuroses."

Dr. E. E. Southard, Boston: "The 'Not Insane' and 'Voluntary' Admissions to the Psychopathic Hospital, Boston."

The papers of Part I of the symposium were discussed by Drs. D. J. McCarthy, Philadelphia; Walter B. Swift, Boston; W. T. Councilman, Boston; Hugh T. Patrick, Chicago; Frank P. Norbury, Springfield, Mass.; M. A. Hallowell, Vineland, N. J.; A. C. Gillis, Baltimore; James J. Putnam, Boston; Donald Gregg, Brookline, Mass., and E. E. Southard, Boston.

The following officers were elected for the ensuing year: Chairman, F. X. Dercum, Philadelphia; Vice-Chairman, H. G. Brainard, Los Angeles; Secretary, George A. Moleen, Denver; Delegate, W. W. Graves, St. Louis.

Papers composing the remainder of the symposium were read as follows: Part II:

Dr. Ross Moore, Los Angeles: "Present Teaching of Psychiatry in American Medical Schools."

H. Douglas Singer, Hospital, Ill.: "The Ideal Course in Psychiatry for Medical Schools."

The papers of Part II of the symposium were discussed by C. W. Burr, Philadelphia. The remainder of discussion was postponed to afternoon session.

Dr. Ross Moore, Los Angeles, offered the following resolution:

Resolved, That it is the sense of the Section on Nervous and Mental Diseases of the American Medical Association that the present methods of teaching psychiatry in a large percentage of American medical colleges are inadequate. They are inadequate chiefly because of lack of time given the subject by curriculum committees and because of the absence of psychiatric clinics. The Section recommends that more attention be given this matter in the future, especially by the Council on Medical Education. [Referred to Council on Medical Education.]

The resolution was adopted, and the Secretary was requested to transmit a copy to the House of Delegates through the representative of the Section.

Thursday, June 25—Afternoon

Discussion of Part II of the symposium presented at the morning session was continued by Drs. C. R. Woodson, St. Joseph, Mo.; James J. Putnam, Boston; J. T. Fisher, Los Angeles; Frank P. Norbury, Springfield, Ill.; Ross Moore, Los Angeles, and H. Douglas Singer, Hospital, Ill.

Dr. C. D. Camp, Ann Arbor, offered a resolution confirming Dr. Moore's resolution of the day before.

On motion, carried, the foregoing resolution was adopted.

Dr. Wilfred Harris, London, England, read a paper on "Some Experiences with Alcohol Injection in Trigeminal and Other Neuralgias." Discussed by Drs. Charles R. Ball, St. Paul; Peter Bassoe, Chicago; C. D. Camp, Ann Arbor; George A. Moleen, Denver, and Wilfred Harris, London.

On motion, a rising vote of thanks was extended to Dr. Harris for his attendance at the meeting and for the presentation of his paper.

Dr. G. Wilse Robinson, Kansas City, Mo., read a paper on "The Use of Celluloid Splints in the Treatment of Diseases of the Nervous System." No discussion.

Dr. Robert Foster Kennedy, New York, read a paper on "Acute Disseminated Sclerosis and its Visual Symptoms." Discussed by Drs. George A. Moleen, Denver; Peter Bassoe, Chicago; W. W. Graves, St. Louis, and Robert Foster Kennedy, New York.

Dr. S. Leopold, Philadelphia, read a paper on "Subarachnoid Hemorrhage: A Contribution to the Subject of Spontaneous Hemorrhage." Discussed by Dr. W. W. Graves, St. Louis.

Dr. Morris J. Karpas, New York, read a paper on "Kraepelin's Conception of Paraphrenia." Discussed by Drs. H. Douglas Singer, Hospital, Ill.; L. B. Pilsbury, Lincoln, Neb., and Morris J. Karpas, New York.

Dr. Charles A. McKendree, Cromwell, Conn., read a paper on "A Case of Myasthenia Gravis." Discussed by Dr. George A. Moleen, Denver.

Dr. William W. Graves, the retiring Chairman, thanked the members for their assistance in carrying out what he believed to be the most successful program in the history of the Section, calling attention to the fact that out of thirty papers on the program, twenty-six were presented in person by the authors. And he further stated that without doubt the work relating to education in nervous and mental diseases which has had its inception in this meeting, would go on, and that the time will come when nervous and mental diseases will be properly considered in medical schools.

SECTION ON DERMATOLOGY

Tuesday, June 23—Afternoon

The Chairman, Dr. Richard L. Sutton, Kansas City, called the meeting to order at 2:15 p. m.

In the absence of Dr. Joseph Zeisler, Chicago, the chairman appointed Dr. M. L. Heidingsfeld, Cincinnati, to serve on the Executive Committee.

The Chairman announced the following to act as a Nominating Committee: Drs. S. E. Sweitzer, Minneapolis; Clarence Baer, Milwaukee, and Ernest L. McEwen, Chicago.

Dr. Sutton then read the Chairman's Address, entitled "The Future of Dermatology in America."

Dr. M. B. Hartzell, Philadelphia, read a paper on "Granuloma Annulare, with a Report of Four Cases." Discussed by Drs. Charles J. White, Boston; William A. Pusey, Chicago; A. Ravogli, Cincinnati; Frank E. Simpson, Chicago; Frank W. Cregor, Indianapolis; Richard L. Sutton, Kansas City, and M. B. Hartzell, Philadelphia.

The following papers were read as a Symposium on the Control of Leprosy:

Dr. W. C. Rucker, Washington, D. C.: "The Necessity for the Establishment of a National Leprosarium."

Dr. Isadore Dyer, New Orleans: "The Attitude of the Government in Leprosy Care and Control."

These two papers were discussed by Drs. Martin F. Engman, St. Louis; William S. Gottheil, New York; Ernest L. McEwen, Chicago; M. L. Ravitch, Louisville; Charles J. White, Boston; Jay F. Schamberg, Philadelphia; M. B. Hartzell, Philadelphia; S. E. Sweitzer, Minneapolis; Gardner T. Swarts, Providence, R. I.; W. C. Rucker, Washington, D. C., and Isadore Dyer, New Orleans.

Dr. Martin F. Engman offered the following motion, which was unanimously adopted: "Moved that a committee of three be appointed from this Section to draft a resolution to be presented to the House of Delegates on the question of urging the U. S. Government to prepare a way for the national control of leprosy and the foundation of a national leper home."

The Chairman announced the following to serve on this committee: Drs. Martin F. Engman, St. Louis; Charles J. White, Boston, and James M. Winfield, Brooklyn.

Dr. M. L. Heidingsfeld, Cincinnati, read a paper on "A New Method of Treatment of Lupus Vulgaris." Discussed by Drs. William T. Corlett, Cleveland; M. L. Ravitch, Louisville; H. C. Baum, Syracuse; William S. Gottheil, New York; S. E. Sweitzer, Minneapolis; Henry H. Hazen, Washington, D. C.; J. B. Shelmire, Dallas; Jay F. Schamberg, Philadelphia; M. B. Hartzell, Philadelphia; J. B. Kessler, Iowa City, Iowa, and M. L. Heidingsfeld, Cincinnati.

Dr. William L. Clark, Philadelphia, read a paper on "The Desiccation Treatment of Congenital and New Growths of the Skin and Mucous Membranes. A Lantern Demonstration." Discussed by Drs. Jay F. Schamberg, Philadelphia; Henry H. Hazen, Washington, D. C.; C. A. Simpson, Washington, D. C.; William H. Schmidt, Atlantic City; Arthur F. Holding, New York, and William L. Clark, Philadelphia.

Wednesday, June 24—Morning

Dr. Martin F. Engman, St. Louis, presented the following resolutions on leprosy, a motion to make this a special order of business being unanimously adopted:

To the Honorable House of Delegates of the American Medical Association:

The Section on Dermatology of the American Medical Association respectfully submits the following resolutions, which have been unanimously adopted by the Section *on June 24, 1914:*

Whereas, Leprosy exists in many foci in this country, and has been statistically shown to be on the increase; and

Whereas, Those affected with leprosy are being subjected to most inhuman treatment; and

Whereas, Many lepers are traveling in interstate traffic because of the inhuman treatment to which they are subjected, thereby constantly exposing the general public to the contagion; and

Whereas, It is the duty of the federal government to control traffic between the states; and

Whereas, At the present time the care of the lepers in the United States is a great economic burden on the individual states and is, moreover, of necessity inadequate from a medical and sanitary standpoint; therefore, be it

Resolved, That the Association recommends the passage by Congress of a law for the comprehensive care and control of leprosy by the federal government.

[This was referred by the House of Delegates to the Reference Committee on Hygiene and Public Health.]

Dr. A. Ravogli, Cincinnati, read a paper entitled "A Few Practical Points on the Treatment of Leg Ulcers." Discussed by Drs. Frank E. Simpson, Chicago; J. B. Kessler, Iowa City, Iowa; M. L. Heidingsfeld, Cincinnati; Martin F. Engman, St. Louis, and A. Ravogli, Cincinnati.

Drs. Frank Crozer Knowles and Leonard D. Frescoln, Philadelphia, presented a paper on "Unusual Types of Diphtheria of the Skin. Report of Two Cases." Discussed by Drs. Henry C. Baum, Syracuse; Martin F. Engman, St. Louis; M. Haase, Memphis; A. Ravogli, Cincinnati; H. N. Cole, Cleveland; Leonard D. Frescoln, Philadelphia, and Frank C. Knowles, Philadelphia.

Prof. G. Arndt, Berlin, presented a paper on "The Diseases and New Growths of the Skin of Lymphatic Origin." Discussed by Drs. H. H. Hazen, Washington, D. C.; J. A.

Fordyce, New York; A. Ravogli, Cincinnati; Martin F. Engman, St. Louis; S. Pollitzer, New York, and Prof. G. Arndt, Berlin.

Drs. Jay F. Schamberg, R. W. Raiziss and John A. Kolmer, Philadelphia, presented a paper entitled "Summary of Research Studies in Psoriasis." Discussed by Drs. William A. Pusey, Chicago; R. W. Raiziss, Philadelphia; John A. Kolmer, Philadelphia; W. S. Gottheil, New York; S. Pollitzer, New York, and Jay F. Schamberg, Philadelphia.

Drs. William S. Gottheil and David I. Satenstein, New York, presented a paper on "Further Experiences with Intravenous Autoserum Injections as an Adjuvant to the Treatment of Inveterate Skin Diseases." Discussed by Drs. Howard Fox, New York; James M. Winfield, Brooklyn; J. A. Fordyce, New York; William T. Corlett, Cleveland; Charles J. White, Boston; M. L. Heidingsfeld, Cincinnati; W. S. Gottheil, New York, and H. N. Cole, Cleveland.

r. William H. Best, Brooklyn, presented a paper on "The of Salvarsan in Non-Syphilitic Diseases." Discussed y Drs. J. A. Fordyce, New York; James M. Winfield, Brooklyn; Frank W. Cregor, Indianapolis; Howard Fox, New York; William T. Corlett, Cleveland, and William H. Best, Brooklyn.

Wednesday, June 24—Afternoon

The following papers were read as a Symposium on Syphilis:

Dr. Charles J. White, Boston: "A Statistical Study of Syphilis. The Relation of Its Symptoms to Subsequent Tabes Dorsalis or General Paralysis."

Dr. H. H. Hazen, Washington, D. C.: "Syphilis in the American Negro."

Dr. Henry J. Nichols, Washington, D. C.; "Observations on the Pathology of Syphilis."

Dr. F. W. Baeslack, Detroit: "A Sero-Enzyme Test for Syphilis."

Dr. John A. Fordyce, New York: "The Treatment of Syphilis of the Nervous System."

Dr. B. C. Corbus, Chicago: "Cerebrospinal Examinations in 'Cured' Syphilis in which the Biologic Method has been Used as a Control."

Drs. Jerome Kingsbury and Paul E. Bechet, New York: "The Intravenous Administration of Mercury in Syphilis."

These seven papers were discussed by Drs. William T. Corlett, Cleveland; S. Pollitzer, New York; C. A. Simpson, Washington, D. C.; A. Ravogli, Cincinnati; Thomas W. Murrell, Richmond, Va.; Claude O. Abernethy, Raleigh, N. C.; H. H. Hazen, Washington, D. C.; Henry J. Nichols, Washington, D. C.; J. A. Fordyce, New York; B. C. Corbus, Chicago, and Paul E. Bechet, New York.

Thursday, June 25—Morning

The following officers were elected for the ensuing year: Chairman, Dr. Howard Fox, New York; Vice-Chairman, Dr. A. Ravogli, Cincinnati; Secretary, Dr. H. H. Hazen, Washington, D. C.; Delegate, Dr. O. H. Foerster, Milwaukee; Alternate, Dr. Ernest D. Chipman, San Francisco.

Prof. G. Arndt, Berlin, was unanimously elected as an honorary member of the Section.

Drs. H. N. Cole and H. O. Ruh, Cleveland, presented a paper on "Pemphigoid in the New-Born (Pemphigus Neonatorum) with Report of an Epidemic." Discussed by Drs. William A. Pusey, Chicago; A. Ravogli, Cincinnati, and H. N. Cole, Cleveland.

Dr. Frank E. Simpson, Chicago, presented a paper on "Radium: Its Use and Limitations in Skin Diseases."

Dr. Arthur F. Holding, New York, presented a paper on "The Relative Value of Radium in Dermatology."

These two papers were discussed by Drs. Isadore Dyer, New Orleans; Henry C. Baum, Syracuse; Fred Wise, New York; Jay F. Schamberg, Philadelphia; William A. Pusey, Chicago; George M. MacKee, New York; Richard L. Sutton, Kansas City, Mo.; Frank E. Simpson, Chicago, and Prof. William Duane, Boston.

Dr. Ludwig Weiss, New York, reported "An Unusual Case of Bromoderma of the Legs." This was discussed by Drs. Ernest L. McEwen, Chicago; A. Ravogli, Cincinnati; M. L. Ravitch, Louisville; George M. MacKee, New York, and Ludwig Weiss, New York.

Drs. George M. MacKee and Fred Wise, New York, presented a paper on "A Case of White-Spot Disease Occurring on the Penis and Scrotum." Discussed by Drs. H. H. Hazen, Washington, D. C.; Frank W. Cregor, Indianapolis, and George M. MacKee, New York.

Dr. S. E. Sweitzer, Minneapolis, presented a paper on "Sarcoid of Boeck." Discussed by Drs. Howard Fox, New York; Frank W. Cregor, Indianapolis, and S. E. Sweitzer, Minneapolis.

Dr. O. H. Foerster, Milwaukee, presented a paper on "Association of Erythema Nodosum and Tuberculosis." Discussed by Drs. Fred Wise, New York; Ernest L. McEwen, Chicago; George M. MacKee, New York; W. C. Brownson, Asheville, N. C.; J. B. Kessler, Iowa City, Ia.; A. Ravogli, Cincinnati; Richard L. Sutton, Kansas City, Mo., and O. H. Foerster, Milwaukee.

The Chairman read a communication from Dr. Craig, the Secretary of the Association, stating that under the new law, the term of service of the Secretary of the Section would be three years, instead of one year, as heretofore.

Adjourned.

SECTION ON PREVENTIVE MEDICINE AND PUBLIC HEALTH

Tuesday, June 23—Afternoon

The Chairman, Dr. M. P. Ravenel, called the meeting to order at 2:34 p. m.

Dr. Ravenel then read his Chairman's address and oration, "The Education of Health Officers." No discussion.

The report of the Committee on Poverty consisted of a symposium of papers by members of the committee, as follows:

Dr. S. C. Knopf, New York: "Tuberculosis as a Cause and Result of Poverty."

Dr. J. N. Hurty, Indianapolis: "Diseases and Poverty."

Dr. Woods Hutchinson, New York, an address on the general theme.

The communications of Drs. Knopf and Hutchinson were discussed by Drs. Edward O. Otis, Boston, and W. A. Evans, Chicago.

Dr. Ernest C. Levy, Richmond, Va., on request of Dr. John F. Anderson, read a resolution, as follows:

> Whereas, The improvement and control of the milk-supply of the country is one of the most important measures for the protection of the public health, and in order that this improvement may be properly directed and the control intelligently exercised, it is necessary that milk standards be established and classes of milk be defined. Therefore, *be it resolved:*
>
> 1. That the Section on Preventive Medicine and Public Health of the American Medical Association urges the House of Delegates to approve of the establishment of uniform milk standards and the classification of milk such as are embodied in the report of the Commission on Milk Standards appointed by the New York Milk Committee and published in the *Public Health Reports*, Aug. 22, 1913; and
>
> 2. That the Section on Preventive Medicine and Public Health of the American Medical Association recommends that the House of Delegates urge the adoption of these standards and classification by municipalities so far as local conditions make that possible.

The resolution, on motion (understood) of its reader, duly seconded, was adopted, and ordered referred to the House of Delegates. [Approved by House of Delegates.]

Dr. R. Q. Lilliard, Chairman, Nashville, Tenn., read the "Report of the Committee on Cerebrospinal Meningitis," which, on motion of Dr. S. C. Knopf, New York, duly seconded, was accepted.

Dr. C. Hampson Jones, Secretary, Baltimore, presented a suggestion for the appointment by the Chairman of a committee of three to draft by-laws for the Section; Dr. J. W. Trask, Washington, D. C., made a motion to that effect, which, being duly seconded, prevailed; in accordance wherewith the Chairman as such committee appointed Drs. J. W. Trask, Washington, D. C.; C. Hampson Jones, Baltimore, and W. A. Evans, Chicago.

WEDNESDAY, JUNE 24—MORNING

Dr. W. C. Woodward, Washington, D. C., as giving effect to a recommendation in the Chairman's address and oration, offered the following:

Resolved, That the Council on Medical Education be requested to investigate the courses of instruction now leading to the degree of Doctor of Public Health and similar degrees and to outline minimum requirements for such courses.

The resolution was duly seconded and, without discussion, carried. [Referred by the House of Delegates to the Council on Medical Education.]

Dr. J. W. Trask, Washington, D. C., requested Dr. W. C. Woodward, Washington, D. C., to formulate a resolution on morbidity reports. Dr. Woodward accordingly presented the following:

Resolved, That a committee be appointed to represent the American Medical Association in any conferences that may be held or any action that may be taken looking toward the formulation and enactment of laws and regulations providing for the reporting of cases of disease and disability.

Dr. Woodward moved the adoption of the foregoing, which was numerously seconded by Dr. Trask and others, and, there being no discussion, the motion prevailed. [Referred by the House of Delegates to the Council on Health and Public Instruction.]

Dr. M. Clayton Thrush, Philadelphia, read a paper on "The Importance of Proper Sanitary Measures in the Preparation of Foodstuffs." Discussed by Drs. J. W. Trask, Washington, D. C.; G. E. Robbins, Chillicothe, Ohio; N. E. Campbell, Chicago; John L. Burkart, Lansing, Mich.; Harold B. Wood, Providence, R. I.; Charles J. Hastings, Toronto; M. P. Ravenel, Madison, Wis.; John W. S. McCullough, Toronto, and M. Clayton Thrush, Philadelphia.

The Chairman announced as his appointees for the Committee on Nominations, Drs. W A. Evans, Chicago; W. S. Rankin, Raleigh, N. C., and J. W Kerr, Washington, D. C.

Dr. John S. Fulton, Baltimore, read a paper on "Criticism of an Attempt to Prove that a Public-Health Laboratory May Distribute Infection." Discussed by Drs. Seneca Egbert, Philadelphia; W. S. Rankin, Raleigh, N. C.; Charles J. Hastings, Toronto; E. R. Kelley, Seattle, Wash.; Martin Friedrich, Cleveland; G. B. Young, Chicago; Ernest C. Levy, Richmond, Va.; I. D. Rawlings, Chicago; J. W. Trask, Washington, D. C., and John S. Fulton, Baltimore.

Dr. N. E. Campbell, Chicago, read a paper on "Some Important Phases of Railway Sanitation." Discussed by Drs. A. M. Harvey, Chicago; J. W. Kerr, Washington, D. C.; John W. S. McCullough, Toronto; G. H. Sumner, Des Moines, Iowa; W. H. Sanders, Montgomery, Ala.; Charles C. Browning, Los Angeles; W. C. Rucker, Washington, D. C.; Charles J. Hastings, Toronto; M. P. Ravenel, Madison, Wis.; Eugene R. Kelley, Seattle, Wash., and N. E. Campbell, Chicago.

Dr. J. W. Trask, Washington, D. C., presented the following:

Resolved, That the Chairman of the Section on Preventive Medicine and Public Health appoint a committee to study and report on the health organization of counties and related geographical units with especial reference to the appointment of full-time and properly qualified health officials.

The proposed resolution was seconded by Dr. J. N. Hurty, Indianapolis; modified by the mover, at the suggestion of a verbal change by Dr. W. S. Rankin, Raleigh, N. C., to read "establishment" instead of "appointment"; discussed by Drs. W. S. Rankin, Raleigh, N. C.; J. W. Kerr, Washington, D. C.; J. E. Ferrell, Washington, D. C.; M. P. Ravenel, Madison, Wis.; J. W. Trask, Washington, D. C., and W. H. Sanders, Montgomery, Ala., and adopted. [The general subject is already under consideration by the Council on Health and Public Instruction. Resolution was not referred to the House of Delegates.]

Dr. J. N. Hurty, Indianapolis, made a motion, duly seconded, that the Section on Preventive Medicine and Public Health appoint a committee to investigate the question of the representation of the Section in the Scientific Exhibit at the annual meeting of the American Medical Association, which motion was adopted, and the membership of the committee fixed at three.

WEDNESDAY, JUNE 24—AFTERNOON

The following papers were read as a Symposium on Tuberculosis:

Dr. Albert P. Francine, Philadelphia: "Principles of State Control of Tuberculosis, with Special Reference to Pennsylvania's System."

Dr. C. Am Ende, New York: "Enemies of the Consumptive."

Dr. Mary E. Lapham, Highlands, N. C.: "The Prevention of Tuberculosis by Periodic Examinations of Schoolchildren."

These three papers were discussed by Drs. Edward O. Otis, Boston; S. C. Knopf, New York; Charles C. Browning, Los Angeles; Theodore B. Sachs, Chicago; W. H. Sanders, Montgomery, Ala.; Adolph Koenig, Pittsburgh; Charles J. Hastings, Toronto; Mr. E. R. Smith, Clark School, Baltimore; Drs. Guy L. Kiefer, Detroit; John Ritter, Chicago; Davis Furman, Greenville, S. C.; Albert P. Francine, Philadelphia; C. Am Ende, New York; Mary E. Lapham, Highlands, N. C., and M. P. Ravenel, Madison, Wis.

Dr. S. C. Knopf, New York, offered a resolution on the question of health insurance, seconded by Dr. Edward O. Otis, Boston, and discussed by Drs. C. Am Ende, New York; J. W. Trask, Washington, D. C., and Louis I. Dublin, New York; whereupon Dr. W. A. Evans, Chicago, offered, as a substitute, the following, left in his hands by Dr. Woods Hutchinson, New York:

That in view of the problems likely to be forced on us by legislative action on state medical insurance, this Section appoint a committee of five to collect data on the results of such legislation in England, Germany and elsewhere, study the applicability of this System of Health Insurance to private practice, and work out a scheme of circumstances under which and fees for which medical service by annual contract can be carried with advantage and profit to both the community and the profession, such committee to report to next annual session of this Section for full discussion.

Dr. Knopf and the seconder of his motion accepting the foregoing substitute motion, presented by Dr. Evans, and the latter being duly seconded, it was discussed by Dr. John Ritter, Chicago, and adopted, with the understanding that the Chair appoint such committee.

Dr. Francis E. Fronczak, Buffalo, N. Y., read a paper on "Present-Day Public-Health Activities."

Dr. Ernest C. Levy, Richmond, Va., read a paper on "Infantile Dejecta an Unrecognized Source of Infection."

These two papers were discussed by Drs. Woods Hutchinson, New York; W. W. Tompkins, Charleston, W. Va.; W. A. Evans, Chicago; J. W. Trask, Washington, D. C.; W. S. Rankin, Raleigh, N. C.; M. P. Ravenel, Madison, Wis.; C. Am Ende, New York; C. Hampson Jones, Baltimore; Charles J. Hastings, Toronto; Davis Furman, Greenville, S. C.; John S. Fulton, Baltimore; Francis E. Fronczak, Buffalo, and Ernest C. Levy, Richmond, Va.

THURSDAY, JUNE 25—MORNING

The Committee on Nominations reported the following Nominations: Chairman, Dr. C. Hampson Jones, Baltimore; Vice-Chairman, Dr. E. R. Kelley, Seattle, Wash.; Secretary, Dr. O. P. Geier, Cincinnati; Delegate, Dr. Morgan Smith, Little Rock.

Dr. Francis E. Fronczak, Buffalo, moved the adoption of the report of the Committee on Nominations as read; the motion prevailed, and the Chairman declared the nominees elected.

The Chairman then announced his appointments for the following: 1. Committee on Railroad Sanitation: Drs. A. Clark, Hunt, Metuchen, N. J.; N. E. Campbell, Chicago; W. C. Rucker, Washington, D. C.; E. R. Kelley, Seattle, Wash., and S. J. Crumbine, Topeka, Kan. 2. Committee on Poverty: Drs. Woods Hutchinson, S. C. Knopf, Mr. Frederick L. Hoffman and Drs. Guy L. Kiefer and J. W. Trask. 3. Committee on Scientific Exhibit: Drs. Ernest C. Levy, William C. Woodward, W. S. Rankin, R. Q. Lillard and Charles C. Browning.

The retiring Chairman, Dr. M. P. Ravenel, then turned the meeting over to Chairman-Elect Dr. C. Hampson Jones, who, responding to calls for a speech, in felicitous terms acknowledged his sense of the honor conferred and besought the active cooperation of the membership in the serious work of this important Section.

Dr. Myer Solis-Cohen, Philadelphia, read a paper on "School Spread of Contagious Diseases and How to Control It." Discussed by Drs. Ernest C. Levy, Richmond, Va.; Harold B. Wood, Providence, R. I.; C. B. Wood, Monongahela, Pa.; S. L. Jepson, Wheeling, W. Va.; Francis E. Fronczak, Buffalo; I. D. Rawlings, Chicago, and Myer Solis-Cohen, Philadelphia.

Dr. John W. Trask, Washington, D. C., read a paper on "The Provisions of the Model State Law for the Notification of Controllable Diseases." Discussed by Drs. A. T. McCormack, Bowling Green, Ky.; Tom A. Williams, Washington, D. C.; S. L. Jepson, Wheeling, W. Va.; Martin Freidrich, Cleveland; I. D. Rawlings, Chicago; Charles J. Hastings, Toronto, and John W. Trask, Washington, D. C.

Dr. W. H. Price, Detroit, read a paper on "A Year's Experience with Public-Health Contagious-Disease Nurses." No discussion.

Louis I. Dublin, Ph.D., New York, read a paper on "County Health-Organization in the United States." Discussed by Drs. William M. Perkins, New Orleans; W. H. Sanders, Montgomery, Ala.; W. S. Rankin, Raleigh, N. C.; John W. Trask, Washington, D. C.; S. C. Knopf, New York; A. T. McCormack, Bowling Green, Ky., and Louis I. Dublin, Ph.D., New York.

Thursday, June 25—Afternoon

A joint meeting was held with the Section on Pharmacology and Therapeutics.

The following papers were read as a Symposium on Pellagra:

Drs. J. F. Siler and P. E. Garrison, Washington, D. C., and W. J. MacNeal, New York: "The Work of the Thompson-McFadden Pellagra Commission."

Drs. Edward Francis, C. H. Lavinder, R. M. Grimm and W. F. Lorenz, Washington, D. C.: "Attempts to Transmit Pellagra to Monkeys."

Dr. Carl Voegtlin, Washington, D. C.: "Treatment of Pellagra."

These three papers were discussed by Drs. Marcus Haase, Memphis, Tenn.; R. Q. Lillard, Nashville, Tenn.; W. C. Brownson, Asheville, N. C.; W. T. Shell, Corsicana, Tex.; John L. Jelks, Memphis, Tenn.; Robert Wilson, Charleston, S. C.; Ward J. MacNeal, New York; Claude Smith, Atlanta, Ga.; J. F. Siler, Washington, D. C.; John Ritter, Chicago; Edward Francis, Washington, D. C., and Carl Voegtlin, Washington, D. C.

Dr. C. J. Hunt, Harrisburg, Pa., read (in abstract) a paper entitled "Certain Problems in Infant Mortality." No discussion.

SECTION ON GENITO-URINARY DISEASES

Tuesday, June 23—Afternoon

The meeting was called to order at 2:20 p. m., the chairman, Dr. Arthur L. Chute, Boston, presiding.

The chairman stated that neither the delegate to the House of Delegates nor the alternate was present, and that it would be necessary to elect a delegate. Thereupon Dr. W. M. Spitzer, Denver, was elected delegate to the House of Delegates.

Dr. J. Dellinger Barney, Boston, read a paper on "The Ultimate Results of Genital Tuberculosis in the Male." Discussed by Drs. B. C. Corbus, Chicago; R. H. Herbst, Chicago; J. H. Cunningham, Jr., Boston; Edward L. Keyes, Jr., New York, and J. Dellinger Barney, Boston.

Dr. W. F. Martin, Battle Creek, Mich., read a paper on "The Value of Hydrotherapy in Urologic Cases." Discussed by Drs. D. Miller Barr, Atlantic City, and W. F. Martin, Battle Creek.

Dr. Alexander Randall, Philadelphia, read a paper on the "Endoscopic Treatment of Nocturnal Emissions."

Dr. A. G. Rytina, Baltimore, read a paper on "The Radical Removal of Certain Types of Diseased Verumontanum with Notes on Their Pathology."

These two papers were discussed by Drs. H. L. Leiter, Syracuse, N. Y.; J. D. Barney, Boston; F. W. Robbins, Detroit; H. L. Kretschmer, Chicago; Louis E. Schmidt, Chicago; E. L. Keyes, Jr., New York; John A. Hawkins, Pittsburgh; Frederick Charlton, Indianapolis; R. H. Herbst, Chicago; Alexander Randall, Philadelphia, and A. G. Rytina, Baltimore.

Dr. E. L. Keyes, Jr., New York, read a paper on "A Method of Controlling Hemorrhage after Suprapubic Removal of the Hypertrophied Prostate." Discussed by Drs. F. R. Hagner, Washington, D. C.; C. E. Barnett, Fort Wayne, and E. L. Keyes, Jr., New York.

The chairman called attention to the fact that it was necessary for members desiring the *Transactions* of the Section to subscribe for them. He asked that each member subscribe for two copies, so that as heretofore one hundred copies could be sent to journals, libraries and prominent men abroad.

Wednesday, June 24—Morning

Dr. R. H. Herbst, Chicago, read a paper on "The Treatment of Hydrocele with Special Reference to Phenol Injections." Discussed by Drs. A. A. Martin, New Zealand; V. D. Lespinasse, Chicago; B. A. Thomas, Philadelphia; Frank Hinman, Baltimore, and R. H. Herbst, Chicago.

Dr. V. D. Lespinasse, Chicago, read a paper on "Permanent Epididymotomy." Discussed by Drs. Henry L. Sanford, Cleveland; W. M. Spitzer, Denver; H. L. Kretschmer, Chicago; Edward Martin, Philadelphia, and V. D. Lespinasse, Chicago.

Dr. Frank Hinman, Baltimore, read a paper on "Malignant Disease of the Testes and Its Operative Treatment." Discussed by Drs. Hugh H. Young, Baltimore; F. W. Robbins, Detroit; E. L. Keyes, Jr., New York; Martin Krotoszyner, San Francisco, and Frank Hinman, Baltimore.

The chairman announced the appointment of Drs. Hugh H. Young, Baltimore; E. L. Keyes, Jr., New York, and A. C. Stokes, Omaha, as members of the Nominating Committee.

Dr. B. A. Thomas, Philadelphia, read a paper on "The Rôle of Functional Kidney Tests and the Preoperative and Postoperative Treatment in the Reduction of Prostatectomy Mortality." Discussed by Drs. Hugh H. Young, Baltimore; Edward Martin, Philadelphia; M. Krotoszyner, San Francisco; Hugh Cabot, Boston; W. F. Braasch, Rochester, Minn., and B. A. Thomas, Philadelphia.

Dr. Charles E. Barnett, Fort Wayne, read a paper on "Suprapubic Prostatectomy." No discussion.

Dr. William M. Spitzer, Denver, read a paper on "Continuous Painless Renal Hemorrhage and Its Treatment." Discussed by Drs. H. L. Kretschmer, Chicago; W. F. Braasch, Rochester, Minn.; Hugh Cabot, Boston; J. W. Squires, Charlotte, N. C., and W. M. Spitzer, Denver.

Dr. I. S. Koll, Chicago, read a paper on "A Study of the Action of the Colon Bacillus on the Kidney." Discussed by Drs. J. Bentley Squier, New York; Louis E. Schmidt, Chicago; H. W. Plaggemeyer, Detroit; A. J. Krowell, Charlotte, N. C., and I. S. Koll, Chicago.

Wednesday, June 24—Afternoon

Dr. J. Bentley Squier, New York, read a paper on "Surgery of the Bladder."

Dr. Arthur L. Chute, Boston, delivered the Chairman's Address, "A Plea for a More Extensive Operation in Cancer of the Bladder."

These two papers were discussed by Drs. Eugene Fuller, New York; John L. Atlee, Lancaster, Pa.; F. R. Hagner, Washington, D. C.; R. L. Rigdon, San Francisco; B. A. Thomas, Philadelphia; L. E. Schmidt, Chicago; Granville MacGowan, Los Angeles; William E. Lower, Cleveland; Martin Krotoszyner, San Francisco; J. B. Squier, New York, and A. L. Chute, Boston.

Dr. Eugene Fuller, New York, read a paper on "Extraperitoneal Rupture of the Bladder: Its Surgical Management." Discussed by Drs. A. G. Rytina, Baltimore; D. N. Eisendrath, Chicago, and Eugene Fuller, New York.

Dr. William E. Lower, Cleveland, read a paper on "Diverticula of the Urinary Bladder with Report of Cases." Discussed by Drs. Martin Krotoszyner, San Francisco; George G. Smith, Boston, and William E. Lower, Cleveland.

Dr. D. N. Eisendrath, Chicago, read a paper on the "Influence of Collargol Injections on the Kidney." Discussed by

Drs. W. F. Braasch, Rochester, Minn.; A. J. Crowell, Charlotte, N. C.; F. R. Hagner, Washington, D. C.; H. D. Furniss, New York; Martin Krotoszyner, San Francisco, and Frederick Charlton, Indianapolis.

Dr. William H. Barber, New York, read a paper on "Renal Infection; a Further Experimental Study of Its Relations to Impaired Ureteric Function." Discussed by Drs. J. W. Draper, New York; W. F. Braasch, Rochester, Minn.; J. H. Cunningham, Jr., Boston; D. N. Eisendrath, Chicago, and W. H. Barber, New York.

Dr. George G. Smith, Boston, read a paper on "Observations on Renal Function Determined by Ureteral Catheterization and Phenolsulphonephthalein Test." Discussed by Drs. B. A. Thomas, Philadelphia; M. H. Wyman, Baltimore; William E. Stevens, San Francisco, and G. G. Smith, Boston.

Thursday, June 25—Morning

The following officers were elected for the ensuing year: Chairman, Dr. Granville MacGowan, Los Angeles; Vice-Chairman, Edward L. Martin, Philadelphia; Secretary, Louis E. Schmidt, Chicago; Delegate, F. M. McCallum, Kansas City; Alternate, John T. Geraghty, Baltimore.

Dr. Martin Krotoszyner, San Francisco, read a paper on "The Differential Diagnosis of Nephrolithiasis and Renal Tuberculosis by Roentgenography." Discussed by Drs. W. M. Spitzer, Denver, and M. Krotoszyner, San Francisco.

Dr. John Geraghty, Baltimore, read a paper on "The Treatment of Pyelitis." Discussed by Drs. I. S. Koll, Chicago; M. Krotoszyner, San Francisco; Louis E. Schmidt, Chicago; William E. Stevens, San Francisco, and John Geraghty, Baltimore.

Drs. W. F. Braasch and G. J. Thomas, Rochester, Minn., read a paper on "The Value of Renal Functional Tests in Surgical Conditions of the Urinary Tract." Discussed by Drs. John Geraghty, Baltimore; B. A. Thomas, Philadelphia; G. G. Smith, Boston; William E. Stevens, San Francisco, and W. F. Braasch, Rochester, Minn.

Dr. Louis E. Schmidt, Chicago, read a paper on "Surgical Interference in Nephritis."

Dr. John H. Cunningham, Jr., Boston, read a paper on "Acute Unilateral Infection of the Kidney."

Dr. Granville MacGowan, Los Angeles, read a paper on "Hemic Infection of the Kidney."

These three papers were discussed by Drs. Hugh Cabot, Boston; B. C. Corbus, Chicago; Martin Krotoszyner, San Francisco; Louis E. Schmidt, Chicago; J. H. Cunningham, Jr., Boston, and Granville MacGowan, Los Angeles.

SECTION ON HOSPITALS

Tuesday, June 23—Afternoon

The meeting was called to order shortly after 2 p. m. by the Chairman, Dr. L. B. Baldwin, Minneapolis.

Dr. Baldwin then read the Chairman's address.

The following papers were read as a Symposium on Hospital Care of Communicable Diseases:

Dr. Robert J. Wilson, New York City: "The Care of Communicable Diseases in General Hospitals."

Dr. D. L. Richardson, Providence, R. I.: "The Prevention of Communicable Diseases in General Hospitals."

These two papers were discussed by Drs. Bracken, Cook, Walsh, Collins, Keefer, Hubbard, Sedgwick, Hornsby, R. J. Wilson, New York, and D. L. Richardson, Providence, R. I.

Wednesday, June 24—Morning

The Section on Hospitals was called to order shortly after 9 a. m. by the Chairman, Dr. Baldwin.

Dr. Walter L. Bierring, Des Moines, Iowa, read a paper on "Physical Therapy in Its Relation to the Hospital Patient from the Point of View of the Internist."

Dr. C. Hermann Bucholz, Boston, read a paper, entitled "Six Years' Experience in the Medicomechanical Department of the Massachusetts General Hospital."

The two papers were discussed by Drs. A. B. Hirsh, Philadelphia, and C. H. Bucholz, Boston.

Dr. Joseph D. Farrar presented the report of the Committee on Hospital Abuses of Charity.

Discussed by Drs. Hornsby, Walsh, Bauer, Hirsh, Wilson and Farrar.

On motion the report was accepted and placed on file.

Thursday, June 25—Morning

The following officers were elected for the ensuing year: Chairman, Dr. Winford H. Smith, Baltimore; Secretary, Dr. John A. Hornsby, Chicago; Delegrate, Dr. F. A. Washburn, Boston; Alternate, Dr. J. B. Howland, Boston.

The following papers were read as a Symposium on Air Problems in Hospitals:

Mr. F. H. Bass, Minneapolis: "Tests of Ventilating Plants."

Mr. C. E. A. Winslow, New York: "The Importance of Studying the Actual Condition of Hospital Air."

Dr. James Alexander Miller, New York: "Ventilation from the Point of View of the Clinician."

Mr. F. H. Lee, New York: "Laboratory Experiments with Air."

Mr. Arthur K. Ohmes, New York: "Possibilities of Mechanical Ventilation."

Mr. T. J. Van der Bent, New York: "Comparisons of Old and New Hospitals."

These six papers were discussed by Drs. Hollings, Cook, Bracken, Shallon, Hornsby and Miller, and Messrs. Edward F. Stevens, C. E. A. Winslow, Arthur V. Ohmes and T. J. Van der Bent.

Thursday, June 25—Afternoon

A joint meeting was held with the Section on Surgery. For a report of the proceedings, see minutes of that section.

SECTION ON ORTHOPEDIC SURGERY

Tuesday, June 23—Afternoon

The meeting was called to order at 2:45 p. m. by the Chairman, Dr. Leonard W. Ely, San Francisco.

Dr. Ely then delivered the Chairman's address entitled, "Orthopedic Surgery; Its Scope and Its Future." No discussion.

Mr. John Fraser, Edinburgh, read a paper entitled, "Some Remarks on the Etiology and Pathology of Bone and Joint Tuberculosis." Discussed by Drs. J. P. Lord, Omaha; Nathaniel Allison, St. Louis; A. H. Freiberg, Cincinnati; F. H. Albee, New York; Arthur Steindler, Des Moines, Iowa; J. D. Griffith, Kansas City, Mo., and John Fraser, Edinburgh.

A vote of thanks was given to Mr. Fraser, together with an amendment that he be recommended for election to honorary fellowship.

Dr. Edward W. Ryerson, Chicago, read a paper on "Recurrent Spondylolisthesis with Paralysis. Bone Splint Transplantation; Recovery." Discussed by Drs. F. H. Albee, New York; Charles A. Parker, Chicago; J. T. Rugh, Philadelphia; J. A. Nutter, Montreal, Canada, and E. W. Ryerson, Chicago.

Dr. Nathaniel Allison, St. Louis, read a paper on "Ankylosis; An Experimental Study." Discussed by Drs. Barney Brooks, St. Louis; J. T. Rugh, Philadelphia, and W. S. Baer, Baltimore.

Dr. W. S. Baer, Baltimore, read a paper on "Arthroplasty with the Aid of Animal Membrane." Discussed by Drs. E. W. Ryerson, Chicago; N. Allison, St. Louis; A. H. Freiberg, Cincinnati; G. G. Davis, Philadelphia; Frederick Hodgson, Atlanta, Ga., and W. S. Baer, Baltimore.

Dr. W. Russell MacAusland, Boston, read a paper on "Arthroplasty of the Elbow-Joint." Discussed by Drs. G. G. Davis, Philadelphia; C. A. Parker, Chicago, and W. R. MacAusland, Boston.

Wednesday, June 24—Morning

Dr. F. J. Cotton, Boston, presented a paper on "A Neglected Form of Ankle Fracture." Discussed by Drs. J. D. Griffith Kansas City, Mo.; G. G. Davis, Philadelphia; H. W. Orr, Lincoln, Neb.; J. P. Lord, Omaha; W. R. MacAusland, Boston; F. E. Peckham, Providence, R. I.; D. B. Phemister, Chicago, and F. J. Cotton, Boston.

Dr. W. G. Stern, Cleveland, read a paper on "The Three Cardinal Signs in the Diagnosis of Fractures into or near Joints." Discussed by Drs. F. J. Cotton, Boston; F. E. Peckham, Providence, R. I., and W. G. Stern, Cleveland.

Dr. Frank E. Peckham, Providence, R. I., presented a paper entitled, "The Treatment of Fractures of Both Bones of the Legs." Discussed by Drs. H. W. Orr, Lincoln, Neb.; F. H. Albee, New York; S. C. Baldwin, Salt Lake City; John Ridlon, Chicago; J. D. Griffith, Kansas City, Mo.; F. J. Cotton, Boston, and Frank E. Peckham, Providence, R. I.

Dr. D. B. Phemister, Chicago, presented a paper on "Necrotic Bone and the Subsequent Changes which it Undergoes." Discussed by Drs. F. H. Albee, New York; C. A. arker, Chicago; Henry W. Frauenthal, New York, and D. . Phemister, Chicago.

Dr. M. S. Henderson, Rochester, Minn., read a paper on "Resection of the Knee for Tuberculosis." Discussed by Drs. E. D. Oppenheimer, New York; W. C. Campbell, Memphis, Tenn.; John Ridlon, Chicago; R. A. Hibbs, New York; Fred J. Gaenslen, Milwaukee; F. H. Albee, New York; John Dunlop, Washington, D. C.; H. W. Orr, Lincoln, Neb.; Emil S. Geist, Minneapolis; Samuel F. Jones, Denver; L. W. Ely, San Francisco; J. D. Griffith, Kansas City, Mo.; A. H. Freiburg, Cincinnati, and M. S. Henderson, Rochester, Minn.

Dr. John Ridlon, Chicago, read a paper on "Coxa Vara."

Wednesday, June 24—Afternoon

Dr. Arthur Steindler, Des Moines, Iowa, read a paper on "Coxa Vara Adolescentium."

The papers of Drs. Ridlon and Steindler were discussed by Drs. Wallace Blanchard, Chicago; W. C. Campbell, Memphis, Tenn.; J. D. Griffith, Kansas City, Mo.; Reginald H. Sayre, New York; G. G. Davis, Philadelphia; E. S. Geist, Minneapolis; John Ridlon, Chicago, and Arthur Steindler, Des Moines, Iowa.

Dr. Z. B. Adams, Boston, presented a paper entitled, "The Relation of Bony Ankylosis of the Lumbar and Sacral Spine to the Cause and Treatment of Scoliosis." Discussed by Drs. Harry Hudson, Philadelphia; John Dunlop, Washington, D. C., and Z. B. Adams, Boston.

Dr. E. G. Abbott, Portland, Me., read a paper on "Scoliosis." Discussed by Drs. Paul A. McIlhenny, New Orleans; R. O. Meisenbach, Buffalo; H. W. Frauenthal, New York; H. W. Orr, Lincoln, Neb.; C. A. Parker, Chicago, and James K. Young, Philadelphia.

Dr. H. B. Thomas, Chicago, read a paper on "Congenital Scoliosis with Specimen Including the Thorax." Discussed by Drs. R. O. Meisenbach, Buffalo, and R. H. Sayre, New York.

Drs. Michael Hoke and Frederick Hodgson, Atlanta, Ga., presented a paper entitled, "Bone and Joint Cases, with Lantern-Slide and Moving-Picture Illustrations." Discussed by Drs. C. A. Parker, Chicago; H. W. Frauenthal, New York, and Frederick Hodgson, Atlanta, Ga.

Dr. Archer O'Reilly, St. Louis, read a paper on "Spondylitic Arthritis; the Question of Diagnosis."

Dr. Henry W. Frauenthal, New York, read a paper on "Syphilitic Bone and Joint Conditions."

These two papers were discussed by Drs. J. D. Griffith, Kansas City, Mo.; James Patterson, Chicago; J. A. Nutter, Montreal; E. D. Oppenheimer, New York; R. O. Meisenbach, Buffalo; A. O'Reilly, St. Louis, and H. W. Frauenthal, New York.

Thursday, June 25—Morning

The following officers were elected: Chairman, Dr. Nathaniel Allison, St. Louis; Vice-Chairman, Dr. R. A. Hibbs, New York; Secretary, Dr. Emil S. Geist, Minneapolis; Delegate, Dr. John Ridlon, Chicago, and Alternate, Dr. Leonard W. Ely, San Francisco.

The following resolution, offered by Dr. Orr of Lincoln, Neb., was adopted:

Resolved, That a committee of three be appointed by the Chair to investigate and report to this Section on the efficiency of the various therapeutic methods, surgical and mechanical, now employed in the treatment of tuberculosis of the joints.

A motion was passed that at least one hundred copies of the Transactions of the Section be ordered.

The following papers were read as a symposium:

Dr. B. P. Farrell, New York: "Hibbs' Osteoplastic Operation for Pott's Disease of the Spine: Results of Clinical Observation and Animal Experimentation."

Dr. Fred H. Albee, New York: "Original Use of the Bone-Graft in Pott's Disease, Fractures and Other Conditions."

Dr. John F. Golden, Chicago: "Use of Transplant from the Tibia as a Unit of a Joint."

Dr. Charles M. Jacobs, Chicago: "Observations of Bone Transplantation (Albee's Method) for the Cure of Pott's Disease."

These four papers were discussed by Drs. W. G. Stern, Cleveland; John B. Murphy, Chicago; Dean Lewis, Chicago; Joel E. Goldthwait, Boston; M. S. Henderson, Rochester, Minn.; F. H. Albee, New York, and J. F. Golden, Chicago.

Dr. Robert B. Osgood, Boston, read a paper on "The Relation of Posture and Intestinal Derangements to Coxitis." Discussed by Drs. J. E. Goldtwait, Boston; A. O'Reilly, St. Louis (or Compton Reilly, Baltimore?); C. A. Parker, Chicago; Frederick Hodgson, Atlanta, Ga.; W. G. Stern, Cleveland; R. O. Meisenbach, Buffalo, and R. B. Osgood, Boston.

Dr. F. W. Nathan, New York City, presented a paper on "Mechanics and Pathology of the Hip in Their Relation to the Diagnosis and Treatment of Diseases of the Hip-Joint." Discussed by Drs. R. A. Hibbs, New York; F. H. Albee, New York; Reilly; Wallace Blanchard, Chicago; W. G. Stern, Cleveland; J. E. Goldthwait, Boston; L. W. Ely, San Francisco, and F. W. Nathan, New York.

THE REGISTRATION AT ATLANTIC CITY

The total registration at the Atlantic City Session was 3,958, an increase of 360 over the number of registrations there in 1912 (1912 registrations, 3,598).

REGISTRATION BY SECTIONS

Practice of Medicine	1,031
Surgery	977
Obstetrics, Gynecology and Abdominal Surgery	309
Ophthalmology	352
Laryngology, Otology, Rhinology	211
Diseases of Children	142
Pharmacology and Therapeutics	24
Pathology and Physiology	113
Stomatology	68
Nervous and Mental Diseases	150
Dermatology	87
Preventive Medicine and Public Health	153
Genito-Urinary Diseases	117
Hospitals	24
Orthopedic Surgery	86
Registrations without specifying any one section	84
Foreign guests and others who registered	30

Notice on Section Transactions

Those who desire copies of the 1914 Transactions of any of the sections, but whose names are not on the permanent subscription list, should order at once, as printing will soon commence. The editions of each of these section transactions is limited. Only enough copies are printed to supply the probable demand, and each year some persons order too late to be supplied. Each volume is a cloth-bound book containing the articles and discussions in that particular section. The price, when ordered in advance, is $1 a volume, payable at time of delivery.

It is to be remembered that one may give a permanent order for Transactions; and those specified are sent, from year to year, until the order is canceled. Address orders to the American Medical Association, 535 North Dearborn Street, Chicago

Society Proceedings

AMERICAN PEDIATRIC SOCIETY

Twenty-Sixth Annual Meeting held in Stockbridge, Mass., May 26-28, 1914

(Concluded from page 55)

Recurrent Vomiting in Private Practice

DR. CHARLES GILMORE KERLEY, New York: Of 141 cases, 70 were boys and 71 girls. The average time the cases were followed was 104 weeks. The diagnosis was based on definite periodic attacks of vomiting. The family history showed that in one or both parents there was rheumatism in 40, and sick headaches and bilious attacks in 40. The condition occurred in the vast majority of cases in the offspring of those who for two or more generations had not been doing manual labor, having usually business or professional occupations. In 31 per cent. of the cases the appetite was good, in 69 per cent. poor. In 59.5 per cent. there was constipation. In 83 the average hemoglobin was 63.5 per cent. and the red blood-cells were 4,280,000. Sixty-nine of the cases had been difficult feeders. Recurrent colds had been present in 41 per cent. In 12 there was a definite history of eczema, 6 had a habit tic, 14 either had or gave a history of having had enuresis, and 13 had had rheumatism. The presence of acetone in the urine was noted in the later attacks with very few exceptions. The onset of the vomiting occurred in 37 cases in the first year, in 24 in the second, and in 21 during the third year of life; in the remainder of the series it occurred from the third to the ninth year. The duration of the interval between the attacks varied greatly, as did the severity of the attacks. There was a rise of temperature during the attacks in 90 per cent. A few cases ran very high temperatures, but the majority of the cases showed a temperature of from 100 to 102 F. In the majority the recurrent vomiting was controlled; in 9 there was an improvement and in 16 no apparent improvement. In some which were not cured the treatment was carried out indifferently.

The association of recurrent vomiting with recurrent bronchitis and other forms of illness is interesting. Sometimes the conditions occurred simultaneously and at other times they were interchangeable. Two brothers were of particular interest in that they had attacks simultaneously, beginning with tonsillitis, followed by bronchitis and asthma, and ending with recurrent vomiting, lasting for a day or two.

The dietetic management is the same, in the main, in all cases. Cow's milk, butter and sugar are omitted from the diet. One egg is allowed perhaps every third day. Saccharin is permitted as a sweetening agent. Three meals a day are allowed but nothing between meals. Red meat is given scantily three times a week, poultry and fish at other times. In some instances skimmed milk is permitted but never more than one pint daily. The further treatment consists of the internal use of salicylate of soda, bicarbonate of soda, independent or in combinations as devised by Rachford. This drug treatment is carried on for periods of months or years as the case may require. Daily physical exercise is a very important factor. A warm bath and a rub at night is also given and in recalcitrant cases physical therapeutics have proved very effective. The nervous element in these cases is not to be forgotten. The precipitation of an attack by fatigue or fright is not unusual. During the acute vomiting attack a weak solution of bicarbonate of soda is best retained in the strength of 5 grains of bicarbonate of soda to 8 ounces of hot water. As a laxative the magnesium preparations are best. When the vomiting has continued for from twenty-four to thirty-six hours colonic flushings with bicarbonate of soda, 2 drams to 8 ounces, at six- or eight-hour intervals are given. Nothing is gained by attempts at forced feeding.

DISCUSSION

DR. IRVING M. SNOW, Buffalo, N. Y.: In a case that came under my observation in a child with recurrent vomiting and profuse gastric hemorrhages, it was found that there was a hyperacidity, believed to be due to duodenal ulcer with delayed motility. The child was given cream, butter and bacon and also strong alkalies, and made a complete recovery.

DR. CHARLES HUNTER DUNN, Boston: In a similar series of cases seen in private practice and in association with Dr. Rotch the relation to acid intoxication interested me. There seem to be two types of cases. Some seem to be cases of true acid intoxication as Dr. Kerley has described them and another class of cases in which large doses of bicarbonate of soda does not give the slightest benefit. Two cases in which there was fatal hemorrhage made such an impression on me that I have given up the use of bicarbonate of soda. The presence of acetone in the urine is a symptom only.

DR. ALFRED FRIEDLANDER, Cincinnati: Fischer and others who used the alkaline treatment in severe cases are now using a solution of dextrose (20 grams) and sodium chlorid (14 grams) to the liter by rectum. The results thus far are surprisingly good; the profound exhaustion has not appeared and the patients have rallied more promptly. It is too soon to make definite statements about this treatment, but I think it ought to go on record because of the excellent results claimed for it.

DR. ISAAC A. ABT, Chicago: The diet during the interval has no effect on the recurrence of the attacks, they occur about so often no matter what food is taken, neither does the mode of life make any apparent difference, except that a nervous attack or a mild infection may bring on an attack. Eight per cent. glucose in normal salt solution per rectum has been recommended. I have found that bicarbonate and ice-cold chloroform water repeated frequently give relief.

DR. J. P. CROZER GRIFFITH, Philadelphia: Years ago I came to the conclusion that there were cases of recurrent vomiting that could be benefited by bicarbonate and others that could not. Even the giving of bicarbonate between the attacks has no effect. "Recurrent" in connection with these cases does not mean recurring at specific times. In my experience some patients have been benefited by an alteration in the diet while others have not. During the attack I have found nothing as good as a hypodermic injection of morphin. The objection to this is that it stops elimination; that may be, but it sometimes saves life.

DR. HENRY HEIMAN, New York: Cyclic vomiting is a metabolic disturbance of fats as well as of proteids producing acetone bodies. The acidosis is not fatal, but I have seen a case result in eclampsia with a temperature of 108 F. in which no treatment could save the child. The moderate cases respond to bicarbonate of soda in peppermint, the latter acting as a mild local analgesic. One may also use bicarbonate in small amounts by the rectum, by hypodermoclysis or by intravenous injection. Intermittent treatment acts as a prophylactic.

DR. JOHN RUHRÄH, Baltimore: The proper management of the diet during the interval does do some good. If the condition is due to an excess of fats, proteids or carbohydrates, we certainly do some good by eliminating the offending substance. There are attacks due to reflex nervous conditions which are recurrent and it is difficult to say what the basis of these are.

DR. J. H. MASON KNOX, Baltimore: In certain cases in older children atropin pushed to the physiologic limits in connection with other measures will be found to be effective.

DR. WILLIAM P. NORTHRUP, New York: I have had cases which were led on to complete recovery by massage, after other measures had failed.

DR. CHARLES GILMORE KERLEY, New York: I realize that there may be a starvation of carbohydrates and sugars, but an excess of sugar brings about just as bad results as too little. I have found physical therapeutics a most valuable adjunct in the treatment of recalcitrant cases. The class of cases of which I have spoken are not cases of anaphylaxis, but answer better to the description of acidosis as accepted at the present time. I do not know why the diet in the interval would not be of benefit.

The Artificial Cooling of Sick Rooms in Summer

Dr. Henry Heiman, New York: Thirteen selected patients were placed in a cooled room and the treatment given them was similar to that given any ordinary case of enteritis. The average temperature of the room was 69 F. for forty-two days and ranged from 63 to 74 F., and at all times from 5 to 11 degrees below the outside air. The relative humidity was very much the same as that of the outside air, but the absolute humidity was diminished by the cooling. The air was filtered, washed and cooled by cooling coils. We have gained the impression that in this ward the children were more comfortable, cried less, and looked less sick and parched. This method is not applicable to moribund and premature babies, but is suitable for all others.

DISCUSSION

Dr. Henry I. Bowditch, Boston: We had a similar plant installed at a great expense, but the fan was a long way off from the coil room and as a consequence the ducts became clogged with dust and we have given up its use.

Dr. Fritz B. Talbot, Boston: Dr. Bowditch forgot to say that we tried to start the apparatus one day and the dust was very annoying and resulted in 75 per cent. of the children and all the nurses in the ward getting infectious colds.

Dr. B. S. Veeder, St. Louis: We have a room cooled by refrigerating pipes arranged along one side of the room; in this way the atmosphere is cooled without cold air coming into the room.

Dr. Samuel S. Adams, Washington, D. C.: As confirmatory of the benefit of cooling a room I may cite the case of a boy under my care. The temperature was about 90 F. and by means of an electric fan driving the air over a cake of ice the temperature of the room was kept down to 75 F. When the temperature was allowed to rise the boy went into coma. It was finally decided to take him to a cool place and when we got him to an elevation in New York state the change in his condition was strikingly beneficial.

Dr. Henry L. K. Shaw, Albany, N. Y.: At St. Margaret's Hospital we have a five-dollar cooling plant consisting of a pipe rigged up to drip water on a sheet.

Primary Splenomegaly in an Infant

Dr. J. H. Mason Knox, Jr., and Dr. H. J. Wahl, Baltimore: The patient is an infant 11 months of age who has never thrived and weighs 11 pounds. He is one of a family of eleven children, three of whom died in infancy. Six are well and range in age from 20 to 4 years. The patient showed a general malnutrition associated with idiopathic enlargement of the spleen, liver and lymph-nodes and peculiar yellowish pigmentation of the skin of the exposed parts. The blood picture was normal until a few days before death when it assumed the appearance characteristic of lymphatic leukemia. At autopsy the liver, spleen and the lymphoid tissues were very much enlarged and firm. Histologically there was more or less disappearance of the lymphoid elements, which were largely replaced by large swollen, rounded or polygonal cells with small nuclei and abundant foamy appearing cytoplasm. The affected organs showed a variable amount of iron-containing pigment. In this case the large cells apparently arise from both the endothelium and the reticulum. The picture in the spleen resembles that first described by Gaucher in 1882. The condition suggests a systemic disease of the lymphohematopoietic tissues, but apparently any reticulated tissue may be involved. The condition is very probably related to other blood diseases.

Case of Gaucher's Disease

Dr. Charles Herrman, New York: The patient was a boy, 14 years of age, in whom the disease had been running a chronic course since he was 4 years of age. There was marked enlargement of the spleen, moderate enlargement of the liver, no distinct enlargement of the lymph-nodes, persistent leukopenia with a tendency to epistaxis, discoloration of the face, especially around the nose and a wedge-shaped thickening of the conjunctiva on either side of the cornea. The size of the liver and spleen did not change materially during the seven years that the patient was under observation. As the disease progressed the blood showed a marked decrease in the percentage of hemoglobin, from 75 to 45 per cent.; a slight decrease in the number of red blood-cells, from 4,390,000 to 3,400,000; a constant leukopenia with a decrease in the percentage of polymorphonuclear leukocytes from 20 to 48 per cent. As a result of the operation, besides a marked improvement in the general condition, there was an increase in the hemoglobin from 40 to 55 per cent., in the red blood-cells from 3,400,000 to 4,000,000, and a much more marked increase in the polymorphonuclear leukocytes, from 48 to 75 per cent.

Some Results of Thymus Extirpation

Dr. John Howland, Dr. E. A. Park and Dr. R. D. McClure, Baltimore: The results of our experiments thus far fail to show that the thymus is essential to life. Some of our thymectomized animals have shown retardation in the development of such extent that at the end of six months they were not much more than one-half the size of the controls, but are nevertheless active, healthy looking, normally formed animals. No changes of a rachitic nature have been found. We feel certain in the belief that the thymus gland in dogs is not essential to life and that the changes which result from its removal are not of so gross a nature as has been reported in recent work, which has come particularly from Germany.

DISCUSSION

Dr. Alfred Friedlander, Cincinnati: It is difficult to extirpate the thymus completely, for in certain instances there are accessory thymi and these easily regenerate and take the place of the original thymus and they affect the results of the experiment. Thymectomy in a human being is exceedingly dangerous, and there is no absolute indication for doing it. The operative method has given a mortality of 33 per cent. while the method of shrinking the thymus with the Roentgen ray in twenty-seven cases has proved simple and safe, there being but one death among the twenty-seven cases. We are justified in claiming that in the Roentgen ray we have a means of treating enlarged thymi just as effective and much safer than thymectomy.

Dr. E. A. Park, Baltimore: In regard to the difficulty of completely extirpating the thymus, we have looked for these rests and believe their presence has been greatly exaggerated as we have not found them. As to the operative removal of the thymus, this ought not to be so difficult; of course one cannot remove it entirely without entering the thorax. As performed by Dr. Halstead the operation is simple and ought not to be attended with great danger.

Treatment of the Late Type of Hereditary Syphilis

Dr. Borden S. Veeder and Dr. R. C. Jeans, St. Louis: The treatment we have evolved consists of a combination of neosalvarsan and mercury. The neosalvarsan is dissolved in 1 c.c. of freshly distilled water for each decigram and injected intravenously into any available vein. We have given up the muscular injections because of the pain and discomfort. Neosalvarsan fulfils certain essential requirements for use with children which salvarsan does not. For the treatment of acute lesions neosalvarsan is more effective than inunctions of mercury. We have given some 200 intravenous injections of neosalvarsan and have never noticed any bad or unpleasant effects, except nausea and vomiting in a few instances. In chronic cases of the late type, in which there are such lesions as cerebrospinal syphilis or interstitial keratitis we have been able to secure but little permanent effect from neosalvarsan. The Wassermann reaction is stronger in hereditary lues than in any other form of syphilis and hence it is correspondingly more difficult to make negative. In order to obtain lasting results it is necessary to combine the salvarsan with long and intensive mercurial treatment. No case can be looked on as cured until a negative Wassermann has been obtained and has remained negative without treatment for some time.

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THE FUTURE OF DERMATOLOGY IN AMERICA *

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The progress of dermatology during the past one hundred years has been admirably portrayed by Unna[1] in his oration on the history of eczema during the last century in England. When one realizes that Seguin Henry Jackson, in his unique treatise on "Dermatopathology," published in London in 1794, recognized only two chief forms of inflammation of the skin, erythema and erysipelas, the enormous amount of careful, conscientious labor that has been required to carry our chosen specialty upward, past the barriers of ignorance, prejudice and confusion, to its present position in the scientific world is almost inconceivable.

To the hardy pioneers we owe much. Bateman, Plumb, Jonathan Green, Anthony Todd Thompson, Neligan and Erasmus Wilson in England; Alibert, Beitt, Rayer, Devergie and Bazin in France; Hebra in Germany, and Duhring in America, each did his humble best to unfold the mysteries of dermatology and aid in blazing the pathway to a broader and more comprehensive knowledge of cutaneous medicine. With the passing of the years a healthy spirit of dissatisfaction and unrest gradually developed. Men grew weary of hypotheses and hungry for facts. To quote Flexner:[2]

> The fundamental difference between medieval and modern medicine emerges just here. Medieval medicine theorizes with or without experience. It starts out with a presupposition, a notion, a metaphysical principle, and purports thence to deduce its procedure. Intellectual processes of so dignified a description appear to the vitalist to dispense with the necessity of close observation; percussion, auscultation and the physical measurement of temperature are, in his opinion, crude methods, incapable of penetrating as deeply into the mysteries of disease as his own purely reflective processes. As opposed to this predominately deductive procedure, modern medicine strives to be honestly and modestly inductive—consulting the situation for relative facts, and cautiously drawing provisional conclusions, subject to revision whenever the issue of experience suggests modification. Science is indifferent as to where or how information is obtained. It is concerned only with the vigor, precision and consistency of observation.

Fortunately for us, the present period is one in which science is exceedingly popular, mainly because its benefits are felt and appreciated by the public at large, and the trend of events indicates the coming of great things; so if ever we had a right to become enthusiastic it is now. If the best and most lasting results are to be secured, however, the sphere of our activities must be materially widened, and for this reason the most important problem for us to solve is that of education. Education of the general medical man first, and a more conscientious, willing pupil never lived, and then, through him and through the representative lay press, the public. The importance of early extirpation in cancer, the value of prophylaxis in small-pox, the eradication of venereal disease — if ever these questions are solved it must be with the aid and hearty cooperation of an intelligent citizenship.

The majority of us will, I think, agree with Osler that there are few occupations of a more satisfying character than the practice of medicine, if a man can but once get oriented and bring to it the philosophy of honest work, the philosophy which insists that we are here, not to get all we can out of life, but to see how much we can add to it. From a humanitarian point of view we owe our fellow men much more than we have ever given them. In a host of matters they look to us for advice, guidance and protection.

In our own particular field the most crying need at this time is for a national asylum for lepers, a combined hospital and home where these poor unfortunates can be properly segregated, comfortably housed and intelligently cared for. As Charles J. White[3] has pointed out, the establishment of state institutions for the treatment of these patients is seldom practicable. Few communities will tolerate the presence of such a hospital in their immediate vicinity, and if they would, experience has shown that such establishments are relatively expensive and burdensome to the state supporting them, while, because of the comparative scarcity of the leper population, the inmates are usually so few in number and so mixed in nationality that their retention often amounts practically to solitary confinement. To render matters worse, the funds are seldom sufficient to permit of the employment of skilled and experienced medical men, and in consequence the unhappy patients frequently are denied even the benefit of modern methods of treatment.

Those who have given this matter much consideration and thought believe that the only way out of the difficulty is national control of the disease and its unfortunate victims, and with this opinion I am heartily in accord. In this way only can we hope to care properly for these wretched individuals, and save them from a worse fate than that which bitter circumstance has thrust on them.

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* Chairman's address, read before the Section on Dermatology at the Sixty-Fifth Annual Session of the American Medical Association, at Atlantic City, June, 1914.

[1] Unna: Brit. Jour. Dermat., 1902, xiv, 239.

[2] Flexner: Medical Education in Europe, Carnegie Foundation for the Advancement of Science, Bull. 6, p. 5.

[3] White, Charles J.: Jour. Cutan. Dis., 1913, xxxi, 799.

Not distantly related to the question of leprosy is that of syphilis. We may mistreat the leper, but all too often the poor syphilitic escapes treatment altogether, at least treatment that is worthy of the name. Formerly we had to contend with the protiodid-pill enthusiast, and to this day fully one-half of the tabetics and paretics that consult me have had months or even years of protiodid medication, a form of treatment that was usually as worthless as it was convenient and fascinating. Now we must battle with the salvarsanist, the misguided therapeutist who assures his intended victims that one or two small doses of neosalvarsan, administered intravenously and painlessly, will forever safeguard them from all the luetic complications that human flesh and blood are heir to. Mercury and salvarsan are invaluable drugs when properly employed, but casual treatment of a disorder like syphilis is to be deplored, for it can lead only to a false sense of security from which the patient generally awakens too late to be benefited by any plan of treatment, no matter how vigorous. One of the members of this Section, Dr. Corlett[4] of Cleveland, has done much to bring the profession to a realization of its responsibility in this matter and to the prevalence and danger of syphilis generally, and I feel that the subject cannot be agitated too frequently or too vigorously. It is absolutely essential that this affection receive more attention in our medical schools if it is to be successfully combated in actual practice.

While I am discussing scholastic needs, a word regarding the study and teaching of dermatology may not be out of place. What we most need here in America is more hospitals and wards in which young men may have an opportunity to work, wards having their own laboratories attached, with a sufficient number of interns to attend to the routine duties and relieve the instructors of a few of the numerous duties which are inseparably connected with research work. As an antidote for intellectual laziness, a vice which is as prevalent among young medical men as it is fatal to their professional interests, a year's internship in a properly managed institution of this kind should prove of great value, for it would serve to inculcate a habit of industry as well as a love of high ideals, and a practical working knowledge of dermatology along with a lasting desire to investigate thoroughly every pathologic condition with which the student may afterward come in contact.

The experiment that is now under way in two of our leading schools of employing full-time, salaried teachers in clinical medicine is an exceedingly interesting and important one, and if it proves successful, as I believe that it will, it is bound to have a stimulating and wholesome influence on medical education throughout the world.

The advertising "dermatologist" and the "cancer specialist" have long been thorns in the side of the legitimate practitioner of cutaneous medicine. While an ignorant and gullible public is in part responsible for the existence of these parasites, I am not sure that we ourselves are wholly without blame. As Donaldson[5] has intimated:

> Results are what the people want, and what they are going to have, if not through ethical channels they will try the so-called irregular class of practitioners. The quack is ever an optimist, you and I are prone to be pessimists, or as we grow older inoculists. A careless diagnosis, or more frequently no diagnosis at all, is mainly responsible for the quack doctor. We have found that it is impossible to legislate these fakers out of existence, but with a learned and capable profession that is willing to take the time and trouble to do the work that will give relief, the quack will soon become a thing of the past.

I do not believe that all of us realize and appreciate the enormous debt our profession owes to certain of the journals and newspapers here in America for the splendid fight they have made in behalf of pure food, honest drugs and a clean medical profession. As I have already suggested, these reforms have come largely through the education and enlightenment of the general public — few intelligent persons care to be doped or poisoned or swindled, and once their eyes are opened and the source of danger ascertained they can usually be depended on to protect themselves. Quackery and patent medicines have received some of their hardest jolts through the columns of representative lay journals. New York has her *Collier's* and her *Harper's*, Philadelphia her *North-American*, Chicago her *Tribune*, and out in the short-grass country we have the St. Louis *Star* and the Kansas City *Star*, two periodicals that can always be found on the right side when it comes to a fight for decency and the square deal.

Proprietary medicines, which are but patents in pseudoscientific garb, deserve a paragraph all to themselves. It is only during the past few years that the regular medical profession has awakened to the fact that various pharmaceutical houses have long been using it as a stalking-horse for marketing preparations of questionable composition and often of more than questionable therapeutic value. The Council on Pharmacy and Chemistry of the American Medical Association began its propaganda for reform in 1905, and, despite criticism, misrepresentation and bitter opposition, often from the most unexpected sources, this body has supplied us with authentic information concerning the worth, or worthlessness, of a majority of the vast number of "proprietary" preparations now on the market. Some of you may question the advisability of discussing a subject of this kind in an address on dermatology. Gentlemen, whenever a specialist loses sight of the fact that he is a physician, first, last and all of the time, he is no longer fitted to practice dermatology or any other branch of medicine. As Pusey[6] has already told us:

> It is very essential that we know what we give our patients. And the revelations in regard to proprietary remedies have shown above all things that there is no reasonable way of being certain of their composition except by independent examination of them, which the prescriber is himself unable to give. If there is to be any certainty, proprietary medicines, domestic or foreign (and the foreign ones are as bad as our own) must have some independent supervision and be authenticated by an unbiased authoritative examination. Oftentimes even the manufacturer himself does not know exactly what the remedy contains. In short, we have no protection against either ignorance or dishonesty, unless we provide it.

In the Council on Pharmacy and Chemistry we have a board of able, unselfish scientists who are looking after not only our interests, but the interests of every honest drug manufacturer as well, and it is our duty to assist these men in every possible manner. And now, may I ask, how many of us are doing this? Did you ever stop to consider that when you allow your name to appear as an "associate" or "department" editor on the staff of a medical journal, or subscribe or contribute to it in any way, that you are standing sponsor not only for its editorial policy, but also for its advertising standards? How many of the privately owned medical journals in America possess a respectable or even a decent advertising standard? Fortunately, a few of them do, and the number is gradually increasing; but it is not increasing so rapidly as it will when the profession finally realizes the real character of the wares advertised. Then even the most venal of medical journals will find it inadvisable to accept patronage of this character, and not until then "will the erstwhile 'ethical proprietary' become openly what it has always been secretly, a plain patent medicine, and go frankly to such of the newspapers as will accept it. Ultimately, of course, as the medical profession awakens to the evils of the proprietary-medicine business, the fraudulent proprietary will go out of existence, and with it will go the low-grade medical journal."[7] And how can we dermatologists aid in this general clean-up? First, by refusing to prescribe remedies concerning the composition of which we know nothing, and second, by supporting our state journals, the majority of which are clean and dependable. For those of us who care to write, these periodicals, together with The Journal of the American Medical Association and the *Journal of Cutaneous Diseases Including Syphilis,* which at this time is unquestionably the best dermatologic journal published in any language, furnish avenues of ethical publicity amply sufficient for all present needs.

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[4] Corlett: Jour. Cutan. Dis., 1914, xxxii, 117.

[5] Donaldson: Pennsylvania Med. Jour., October, 1911.

[6] Pusey: Jour. Cutan. Dis., 1913, xxxi, 221.

The questions of dermatologic classification and nomenclature, like the poor, we have ever with us. While neither very young nor entirely unsophisticated, I do not care to break a lance with those of my colleagues who are wedded to the alphabetical system of arrangement, irrational though it may seem, or with others who hold that it would simplify matters if every freshly discovered dermatosis were tagged with the cognomen of the individual who first described it; but I do think that the time has arrived when some of our distinguished confrères might safely extract urticaria pigmentosa, erythema solare, epidermidolysis bullosa and dermatitis repens from among the neuroses and distribute them around in the various pigeonholes in which the consensus of opinion would indicate they really belong. Likewise, the advisability of grouping lichen nitidus with the diseases of the appendages of the skin, and pediculosis corporis with the anomalies of the circulation appears somewhat questionable.

The honor of unearthing causative factors in disease is generally shared alike by pathologist and clinician. It is unfortunate that so much of the splendid clinical material in our large cities is practically wasted, so far as research is concerned. In dispensaries and hospitals having an annual registration running into the hundreds, not a single good piece of investigative work has been done in years. The new cases are hastily glanced over, a snap-shot diagnosis made, a prescription for a stock preparation handed out, and the patient goes his way, often carrying with him evidence which, if properly elucidated, would go far toward clearing up some of the problems which now puzzle us so much. The path of least resistance is the one invariably trodden by the multitude, but he who habitually treads it does not as a rule get very far in dermatology or in anything else.

The scientific world is indebted to several members of this Section, and particularly to Johnston and Schwartz,[8] Johnston[9] and, more recently, Schamberg, Kolmer, Ringer and Raiziss,[10] for careful and exhaustive studies on metabolism in various cutaneous diseases. Work of this character is not only difficult and laborious, but requires much skill and great care, for the complicated nature of the investigations renders the liability to error very great. I do not believe that we are at this time in a position fully to appreciate the value of these results, but, as Vaughan has said, no real addition to knowledge is ever wasted, and while all of the facts may not be of practical use at the moment of their discovery, the time is bound to come when each will be found to have served its purpose. In no other branch of medicine is the field for research so great as in dermatology.

Of the clearly defined disorders, it seems strange that verruca vulgaris and lichen planus have not been more thoroughly investigated from the bacteriologic side. Judging from a histopathologic point of view, the former is very probably the result of a localized microbic infection, and the latter a generalized spirochetal one. Neither should prove difficult to a skilled laboratory man employing modern methods. In matters of this kind it is seldom wise to stake too much on precedent.

The recent success of Bunting and Yates,[11] in their work on Hodgkin's disease, should prove a stimulus to all of us.

Of the border-line maladies, it would be well if Hazen's[12] careful and well-balanced studies on the leukemias were duplicated on the purpura group.

The period has been filled and you are growing weary. Ehrlich has said that he could wish for no better appellation than that of *Student und Arbeiter.* Let each of us strive to earn the right to an even nobler designation, that of *Student, Arbeiter und Erzieher.*

New Lathrop Building.

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[7] Keeping Alive the Low-Grade Medical Journal, Current Comment, The Journal A. M. A., March 14, 1914, p. 856.

[8] Johnston and Schwartz: New York Med. Jour., 1909, xxxix, 535.

[9] Johnston: Jour. Cutan. Dis., 1913, xxxi, 136.

[10] Schamberg, Kolmer, Ringer and Raiziss: Jour. Cutan. Dis., 1913, xxxi, 698.

[11] Bunting, C. H., and Yates, J. L.: Cultural Results in Hodgkin's Disease, Arch. Int. Med., August, 1913, p. 236.

[12] Hazen: Jour. Cutan. Dis., 1911, xxix, 52.

Malta Fever in Peru.—Barton in 1911 was the first to report discovery of the *Micrococcus melitensis* in Peru, and von Lopez now reports in the *Cronica Medica,* 1914, xxxi, 58, a number of cases of Malta fever in his district. The first patient was a woman who cared for goats on a ranch; another was a young man who had apparently contracted the Malta fever from goat's milk; another, a woman, had a walking case of undulant fever, in which slight neuralgia and a rheumatoid pain in the shoulder and loss of weight were the only symptoms, except the period of slight fever each day. The triad of sweats, arthralgia and constipation is not always presented, nor the dissociation of the pulse and temperature, and the spleen is not always enlarged. The only constant symptom is the pain in one or more joints; it will not yield to any drugs or measures, and nothing seems to modify it. Hydrotherapy seems the only means to keep the temperature under control. Diphtheria antitoxin by the mouth or subcutaneously seemed to display beneficial action in some of the cases. Arsenic and iron are indicated to combat the hemolytic tendency of the disease.

INFLUENCE OF DIET ON THE TOXICITY OF SUBSTANCES WHICH PRODUCE LESIONS OF THE LIVER OR THE KIDNEY *

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AND
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In a former communication[1] we have described the effect of diet on the toxicity of chloroform and showed that a diet consisting of fat increases the susceptibility of the liver to the necrosis caused by chloroform, whereas a diet consisting in large part of carbohydrates has a protective action. The influence of diet on the toxicity of phosphorus was next tested because it produces profound changes in the liver. Phosphorus causes fatty degeneration of the liver, but its action is not limited to the hepatic cells, for the kidney, heart muscle and other parenchymatous tissues show fatty degeneration. A 1 per cent. solution of phosphorus in oil (oleum phosphoratum) was employed; the amount of oil administered by subcutaneous injection to white rats was very small, since the lethal dose was found to be from 0.07 to 0.08 c.c. per hundred grams of body-weight. The animals, which are omnivorous, were fed during six days preceding injection of phosphorus on a diet consisting of (*a*) oats and sugar, (*b*) pig's heart, or (*c*) beef-fat (Table 1).

TABLE 1.—LENGTH OF LIFE IN DAYS OF ANIMALS WHICH DIED

Oil of Phosphorus per 100 gm. of Body-Weight, c.c.	Oats and Sugar	Meat	Fat
0.05	*	11	*
0.06	*	4	*
0.07	2	4	*
0.08	4	4	4
0.09	4	2	2
Average duration of life	3⅓+	5	3+

* Lived.

In the foregoing experiment pig's heart was given to the animals which received a diet of meat; in another series (Table 2) beefsteak was substituted. In both series the animals received the diet during six days, but in the present series after phosphorus had been administered, the animals receiving meat and fat were given oats in addition.

TABLE 2.—LENGTH OF LIFE IN DAYS OF ANIMALS WHICH DIED

Oil of Phosphorus per 100 gm. of Body-Weight, c.c.	Oats and Sugar	Meat	Fat
0.05	*	4	*
0.06	2	3	*
0.07	*	3	3
0.08	2	3	1
0.09	3	1	2
Average duration of life	2⅓+	2⅘	2+

* Lived.

The effects of diet on the toxicity of oil of phosphorus exhibit no resemblance to those observed with chloroform. A diet composed in great part of carbohydrates has no protective action, whereas fat does not increase susceptibility to the poison. Indeed, there is no noteworthy difference in the toxicity with carbohydrate and with fatty diet. Both series of experiments show that the toxicity of oil of phosphorus is increased by a diet of meat; the fatal dose with a meat diet is probably less than 0.05 c.c., whereas with diet of carbohydrate or of fat the fatal dose is 0.07 or 0.08 c.c. The experiments furnish no explanation of the difference in the effect of diet on the toxicity of chloroform and of oil of phosphorus. Nevertheless, well-known differences between the action of the two substances may be cited. Chloroform produces necrosis of the center of each hepatic lobule, whereas phosphorus causes wide-spread fatty degeneration. Both substances are soluble in fats, but phosphorus is absorbed much less slowly than the volatile chloroform and is less destructive in its action on the hepatic cells. Chloroform affects the centers of the hepatic lobules, and study of control animals which have received a fatty diet shows that fat accumulates in greatest abundance about the central vein. Phosphorus, on the contrary, seems to produce more profound changes in the periphery of the lobule, for in the foregoing experiments, even after four days, proliferation of connective tissue has been observed in this situation.

Since our experiments have shown that the toxicity of a substance, namely, chloroform, which causes necrosis of the liver is diminished by a diet consisting in great part of carbohydrates and notably increased by a fatty diet, experiments have been performed to determine if similar relations to diet are exhibited by substances which produce necrosis of the parenchymatous cells of the kidney. Potassium chromate and uranium nitrate have been chosen because they have a selective action on the kidney, causing necrosis of the cells of the convoluted tubules, and because they have been much used to produce acute nephritis in animals; albuminuria occurs and casts are numerous within the kidney.

The animals were given, during nineteen days, diets consisting of (*a*) oats and sugar, (*b*) pig's heart or beef, or (*c*) beef-fat. At the end of this time an aqueous solution (2.5 per cent.) of potassium chromate was injected subcutaneously (Table 3).

TABLE 3.—LENGTH OF LIFE IN DAYS OF ANIMALS WHICH DIED

Sol. of Potassium Chromate per 100 gm.	Oats and Sugar	Meat	Fat
0.1	*	3	6
0.15	5	3	3
0.2	8	1	3
0.25	1	2	2
0.3	3	1	1
Average duration of life	4¼+	2	3

* Lived.

Similar results were obtained in another series of experiments in which oats were added to the diets of meat and fat.

TABLE 4.—LENGTH OF LIFE IN DAYS OF ANIMALS WHICH DIED

Solution of Potassium Chromate per 100 gm., c.c.	Oats and Sugar	Meat	Egg-Yolk
0.05	*	2	*
0.1	*	2	*
0.15	*	4	*
0.2	*	5	6
0.25	5	3	3
Average duration of life	5+	3⅕	4½+

* Lived.

The experiments indicate that meat increases susceptibility to nephritis caused by potassium chromate, whereas a carbohydrate diet protects the kidney from injury. These conclusions are confirmed by an experiment (Table 4) in which animals were given during six days diets consisting of (*a*) oats and sugar, (*b*) meat (beef) and (*c*) boiled egg-yolk, which contains 35 per cent. of fat, including cholesterin and lecithin. After injection, animals on diets of meat and of egg-yolk received oats in addition.

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* From the Pathological Laboratory of the Washington University Medical School.

[1] Opie, Eugene L., and Alford, Leland B.: The Influence of Diet on Hepatic Necrosis and Toxicity of Chloroform, The Journal A. M. A., March 21, 1914, p. 895.

In the experiment recorded in Table 5, an aqueous solution (0.5 per cent.) of uranium nitrate was administered to animals which had been given during four days a diet consisting of (*a*) oats and sugar, (*b*) beefsteak or (*c*) beef-fat; the diets were continued six days after injection.

TABLE 5.—LENGTH OF LIFE IN DAYS OF ANIMALS WHICH DIED

Solution of Uranium Nitrate per 100 gm., c.c.	Oats and Sugar	Meat (Beef)	Beef-Fat
0.05	*	*	10
0.1	6	*	8
0.15	7	7	6
0.2	9	4	7
0.25	*	4	6
0.3	10	8	9
	—	—	—
Average duration of life	8+	5¾+	7⅔

* Lived.

In another series of experiments animals were on various diets only three days, and oats were given to those receiving meat and fat immediately after injection. Differences referable to diet were much diminished, but carbohydrate, meat and fatty diets exhibited the relations noted in the foregoing experiment.

In a third series of experiments uranium nitrate in small doses was given to animals which had received the diets already enumerated during five days; after injection, oats were added to the diet of all animals (Table 6). The use of small doses of uranium nitrate in this experiment has made the protective action of carbohydrates very conspicuous.

TABLE 6.—LENGTH OF LIFE IN DAYS OF ANIMALS WHICH DIED

Solution of Uranium Nitrate per 100 gm., c.c.	Oats and Sugar	Meat (Beef)	Fat
0.02	*	9	7
0.04	*	*	*
0.06	7	7	9
0.08	*	10	11
0.10	*	11	7
	—	—	—
Average duration of life	7+	9¼+	8½+

* Lived.

A carbohydrate diet diminishes the toxicity both of potassium chromate and of uranium nitrate. The toxicity of potassium chromate has been greater after a diet of meat, but the toxicity of uranium nitrate has been somewhat greater after a diet of fat. The pathologic changes produced in the rat by potassium chromate and by uranium nitrate differ. Both substances produce necrosis of tubules in the cortex of the kidney, leaving the glomeruli apparently uninjured. Both substances produce albuminuria, and casts are numerous within the convoluted and straight tubules of the kidney. With potassium chromate the convoluted tubules undergo necrosis and with moderately large doses they may be almost uniformly destroyed. Uranium nitrate causes necrosis which is often limited to the cortical striae and to a narrow zone in the medulla just below the cortex; this distribution appears to be dependent on a selective affinity of the poison for the loops of Henle, which in the early stages of poisoning may exhibit almost uniform necrosis. After administration of relatively large doses of uranium nitrate there is abundant deposition of calcium salts within the dead tubular epithelium. The second series of experiments mentioned above shows that the occurrence of calcification bears a relation to the severity of intoxication. In four kidneys, after a diet of oats and sugar, calcification occurred only with the largest dose; in four kidneys, after a diet of meat, calcification occurred with the two largest doses. In five kidneys, after a diet of fat, calcification occurred in four.

CONCLUSIONS

The toxicity of phosphorus, which causes fatty degeneration of the liver, is greater in animals which have received a diet of meat than in those which have received diets consisting in large part of carbohydrates or of fat.

Animals on a diet rich in carbohydrates are much less susceptible to nephritis produced by potassium chromate and uranium nitrate than animals on a diet consisting of meat or of fat.

A diet of meat increases the toxicity of potassium chromate, which produces necrosis of the convoluted tubules of the kidney.

A diet consisting of fat increases the toxicity of uranium nitrate, which alters the loops of Henle and produces nephritis.

1806 Locust Street.

THE TECHNIC OF THE INTRADURAL INJECTIONS OF NEOSALVARSAN IN SYPHILIS OF THE NERVOUS SYSTEM

REPORT OF CASES

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In a preliminary report,[1] I described the technic employed in the treatment of syphilis of the nervous system by intradural injections, as first advocated by Ravaut. At the risk of repetition, I shall briefly outline the method of procedure before presenting the report of cases.

The solution used for injection consists of a 6 per cent. solution of neosalvarsan in distilled water. This solution is hypertonic and made of such a concentration that each minim must contain 3 mg. of the drug. The dosage injected is from 3 to 12 mg. — that is, from 1 to 4 drops of the solution, which is made up as follows:

An ampule containing 0.3 gm. of neosalvarsan is dissolved in 5 c.c. of freshly distilled water. If the ampule contains 0.6 gm., 10 c.c. of water are used. In both solutions, each drop will contain 3 mg. of the drug. The syringe employed for the injection is accurately graduated in drops. The patient is placed in a position for lumbar puncture, either sitting or lying, according to the choice of the operator. The puncture is then made with a needle, the end of which fits the graduated syringe. After a few drops of the spinal fluid have flowed out of the cannula, or a greater quantity if a diagnostic puncture is desired at this time, the syringe is fitted into the needle, and the fluid is allowed to run back into the syringe barrel, thus mixing with the amount of the drug in the barrel. The mixed spinal fluid and drug are then gently forced into the canal, and slight suction is made on the syringe to withdraw a second amount of fluid, which washes out the needle. This is then reintroduced, the needle is quickly withdrawn and the patient placed in the Trendelenburg position, in which position he is allowed to remain for at least one hour.

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[1] Wile, U. J.: The Technic of the Intradural Injections of Neosalvarsan in Syphilis of the Nervous System, The Journal A. M. A., April 11, 1914, p. 1165.

During the past nine months, selected cases of syphilis of the nervous system have been treated in my clinic by this method. In all, twenty-five injections have been given to fifteen different patients. The classification of the cases treated is as follows: tabes dorsalis, 7; general paresis, 3; cerebrospinal syphilis, 3; taboparesis, 2.

Following are the case histories with their treatment and results:

REPORT OF CASES

Case 1.—F. W., a man aged 44, with tabes dorsalis, had contracted syphilis twenty-three years ago. Very little treatment had been given. Tabetic symptoms began twelve years ago with shooting pains in the limbs. For the past three years there had been unsteadiness of gait and bladder trouble. The most marked symptoms on examination were absence of deep reflexes; hyperesthesia of the skin of the abdomen; marked incoordination; marked Romberg; slight tremor; Argyll Robertson pupils. Sept. 24, 1913, spinal puncture showed slight but evident increase in pressure; the cells were not counted; albumin and globulin were increased, and the Wassermann was positive. On the same date, the first intradural injection of neosalvarsan, 1 mg., was given. For five days after injection, there was marked exacerbation of lightning pains and girdle sensation. This was relieved by an intravenous injection about two days later of 0.3 gm. of neosalvarsan. Oct. 7, 1913, the second intradural injection, 2 mg., of neosalvarsan was followed by exacerbation of girdle pains and lightning pains which were not so marked as those following the first injection. A note made, October 13, showed a marked improvement in station and decided improvement in general condition. October 17, the third intradural injection of neosalvarsan, 2 mg., was given. Half an hour after the injection there was extreme pain in legs and retention of urine. From this time on until December 5, the patient failed steadily. He developed paraplegia, loss of sphincter control and decubitus. December 5, patient died, and post mortem showed the following changes: old syphilis; taboparesis; fibroid heart; syphilitic aortitis; decubitus; perinephritis; purulent peritonitis; chronic cystitis; syphilitic orchitis. A careful study of the brain and cord by Prof. C. D. Camp showed the changes of tabes and recent degeneration in the posterior columns in the lumbar and thoracic regions. It was thought from the study of these tissues that this degeneration might have been due to the imbibition of toxic substances from the cerebrospinal fluid.

The striking features in this case are the accentuation of the lightning pains; the appearance of more pronounced bladder symptoms in a patient whose bladder was already affected, and the apparent improvement after the second injection, with the progression, however, of the disease after the third injection. Notwithstanding this progression, the spinal fluid became almost normal. A puncture, taken November 11, while the patient's condition was very bad, showed about 13 cells to the cubic millimeter and a negative Wassermann.

Case 2.—C. S., a man aged 32, with cerebrospinal syphilis, transferred from the department of medicine for severe headache and projectile vomiting, had contracted chancre three years ago; he had received treatment with pills and iodid for one year. Headaches began two months previous to admission together with vomiting, projectile in character. Wassermann in the blood, + + + +. Examination of the spinal fluid showed 700 cells to the cubic millimeter; fluid turbid; marked increase in albumin and globulin. Wassermann + + +. October 7, first intradural injection of neosalvarsan, 3 mg., was given. Following the injection, patient had a slight febrile reaction and very slight pains in the legs and head. The headache subsided, however, within a very few days and all vomiting ceased. October 11, patient was so far recovered as to be discharged. October 20, he returned much improved in general appearance and received a second intradural injection, 6 mg. This was followed by slight retention of urine which, however, lasted only a few days. From this time until his second diagnostic puncture, patient improved markedly in general health, had absolutely no headaches, and ceased vomiting entirely. November 6, spinal puncture showed 253 cells to the cubic millimeter, albumin and globulin still positive, reaction much less marked, Wassermann reaction negative in the fluid. November 15, patient was discharged with instructions to continue his treatment in the form of inunctions. A letter from him, March 20, 1914, showed a gain in weight of 15 pounds, no headache, and no vomiting. Occasional numb sensations remained, however, in the legs.

In this case the striking features are the prompt disappearance of symptoms following the first injection, and the marked drop in cells from 700 to 253, and the absence of the positive Wassermann reaction in the fluid following the first injection.

Case 3.—C. H., a man aged 48, transferred from the department of neurology for treatment for taboparesis, was said to have contracted chancre on the finger ten years ago. Treatment had been inefficient. Patient has been a morphin fiend for some years. Examination revealed Argyll Robertson pupils; absence of deep reflexes; marked Romberg; slight hypertonia; ataxic gait; slight speech defect; slight difficulty in voiding urine; girdle sensation and lightning pains; cerebrospinal fluid, 20 cells to the cubic millimeter, increase in albumin and globulin, Wassermann positive. Wassermann in the blood was positive. November 17, the first intradural injection, 3 mg. of neosalvarsan, was followed by subjective improvement. Patient voided more freely and slept well. November 27, the second injection, 6 mg. of neosalvarsan, was followed by marked neuritic pains in the legs, uncontrollable. Puncture taken, November 11, showed 13 cells to the cubic millimeter, Wassermann + + + +, globulin and albumin positive. From this time until December 10, when the patient died, he developed a marked euphoria, retention of urine demanding catheterization, and complained of continuous pains in the abdomen. Postmortem report by Professor Warthin showed old syphilis; paresis; bronchopneumonia; purulent pyelonephritis; pyelitis; cystitis, and general arteriosclerosis. An examination of the brain and cord by Prof. C. D. Camp showed a recent degeneration, and involvement of the posterior columns, suggesting imbibition of toxic substances from the cerebrospinal fluid. The striking features in this case were accentuation of the bladder symptoms and accentuation of the lightning and girdle pains following the second injection.

Case 4.—G. S., man aged 56, with tabes dorsalis, transferred from the department of ophthalmology for positive Wassermann, had contracted syphilis twenty-five years ago. No treatment had been received. Eyesight began to fail three months previous to entrance to hospital, and the patient became almost blind in a short time. The clinical symptoms were optic atrophy; chorioretinitis; Charcot joint; marked incoordination; absent deep reflexes, and Argyll Robertson pupils. Wassermann in the blood, + + + +. Spinal puncture showed 30 cells to the cubic millimeter, and marked increase in albumin and globulin. October 20, patient received his first intradural injection of 3 mg. of neosalvarsan. Injection was followed by no untoward symptoms. Patient said he felt better. Station was decidedly improved. Five days later, he showed markedly less incoordination. Patient was discharged, Oct. 25, 1913, markedly improved. He returned to the hospital Nov. 1, 1913, decidedly better; he felt brighter. Spinal fluid showed 13 cells to the cubic millimeter, albumin and globulin still increased but less, Wassermann negative. Second injection, same date, 6 mg. of neosalvarsan, was followed by slight retention; otherwise patient felt well. Following this injection, however, patient developed a marked ataxia, station became worse and patient developed incontinence. He was discharged from the hospital, and a letter written Oct. 25, 1914, states that he has some difficulty in walking but otherwise feels well.

The striking features in this case were the marked improvement subjectively following the first injection and the marked objective improvement in the spinal, as evidenced by the drop from 30 to 13 cells, from a positive to a negative Wassermann, and from the decrease in the albumin and globulin content. Injection, however, of a larger dose evidently caused a setback in this case, from which the patient recovered somewhat.

CASE 5.—For this patient, Miss B., referred by Professor Barrett from the Psychopathic Hospital where she was under treatment for juvenile general paresis, there was no definite history obtainable. The clinical symptoms were Argyll Robertson pupils, marked speech defect, and general psychic disturbance. Wassermann in the blood was positive. Spinal fluid findings were all positive. This patient received only a single injection and then passed out of our hands. There was a marked increase in her psychic disturbance and no subjective or objective improvement following her treatment.

CASE 6.—V., a man with general paresis, referred by Professor Barrett from the Psychopathic Hospital, had symptoms, disorientation, memory defect, absent deep reflexes, inequality of pupils, marked Romberg and marked speech defect. This patient was injected, Oct. 26, 1913, with one injection of 3 mg. of neosalvarsan which was followed by a marked incontinence of urine and by a temporary intestinal atony. This patient also passed out of our hands and there is no further report of him.

CASE 7.—B., a man with advanced general paresis, transferred by Professor Barrett, had had over 300 paralytic attacks during the past three years. The clinical symptoms were absent deep reflexes, marked Romberg, marked speech defect and Argyll Robertson pupils. Wassermann in the blood, + + +. Cerebrospinal fluid showed 28 cells to the cubic millimeter, marked increase in albumin and globulin and + + + Wassermann. It was noted in this case that all of the symptoms had been increased by a previous intravenous injection of salvarsan and by the injection of salvarsanized serum which he had received in the psychiatric clinic. October 26, patient was injected with 3 mg. of neosalvarsan, and his subsequent history showed absolutely no change for the better or worse.

CASE 8.—E. D., a man aged 45, with tabes dorsalis and cerebrospinal syphilis, was transferred from the department of medicine where he had been treated for stomach trouble—vomiting of three years' duration—for which he had been operated on following a diagnosis of gastric ulcer. Infection had occurred probably eight years before, coincident with soft chancre. Three months of pill treatment had been received. Prominent symptoms were gastric crises; inequality of pupils; positive Wassermann in the blood; cerebrospinal fluid, 12 cells to the cubic millimeter, Wassermann + + + +, albumin and globulin positive. Patient received four intravenous injections of neosalvarsan with no improvement in his condition. Vomiting persisted and he was rapidly emaciating. Nov. 14, 1913, he received his first intradural injection. This was followed by improvement in general condition and gain in weight. Jan. 16, 1914, patient was discharged. He had vomited slightly once or twice since his first injection, but was decidedly better than before. Two weeks after his injection, patient began vomiting again, and a second injection was decided on Dec. 3, 1913, when he received 6 mg. of neosalvarsan. This was followed again by immediate cessation of vomiting. There was, however, still some gastric disturbance. Patient was discharged in much better condition. A letter received from him, March 19, stated that he had gained 20 pounds in weight, was able to eat three meals a day and did not vomit. Spinal puncture, taken Dec. 26, 1913, before his discharge, showed 11 cells, albumin and globulin positive but much less, Wassermann still + + + +.

The striking features in this case are the prompt disappearance of vomiting and pain following the first injection, their reappearance within a short time, and their prompt disappearance again under the second injection, with the marked gain in weight and the restoration of the patient to apparent normal condition. In this case, however, it is noteworthy that the character of the spinal fluid remained unchanged.

CASE 9.—T. L., a man aged 46, with cerebrospinal syphilis, referred from the department of neurology for treatment, had contracted syphilis eight years ago. No efficient treatment had been given. Headache and dizziness began about a year ago, with no improvement under treatment. Patient had been operated on for gall-stones two years ago. No stones were found. Two injections of neosalvarsan a year and a half ago had been followed by slight improvement. Headache, however, was increasing and constant, with extreme dizziness. Symptoms were headache; pain in back, legs and arms; marked Romberg; absent deep reflexes; dizziness; inequality of pupils, and right pupil sluggish to light. Wassermann in the blood was positive. Cerebrospinal fluid, 7 cells to the cubic millimeter, albumin, globulin and Wassermann positive. Patient received four intravenous injections of neosalvarsan without any improvement in symptoms. Intradural injection, Dec. 22, 1913, was followed by no untoward symptoms. There was marked subjective improvement. Jan. 12, 1914, second intravenous injection of neosalvarsan, 6 mg., was given. Spinal fluid taken at this time showed 14 cells, and only a trace of albumin and globulin. Wassermann was negative. Following the second injection, patient showed marked improvement subjectively. His headache practically disappeared and he was discharged from the hospital, Jan. 22, 1914, definitely improved in health. Since that time, however, nothing has been heard from him. The striking features in this case are the marked objective improvement in the spinal fluid findings except for the lymphocyte-count, which was not materially different, and the relief of subjective symptoms following the intradural injections, whereas these had been uninfluenced by intravenous injections of neosalvarsan.

CASE 10.—O. M., a man aged 30, with cerebrospinal syphilis or tabes dorsalis, denied syphilis but admitted exposure. Prominent symptoms were headache, pain in the epigastrium, inequality of pupils, sluggishness of right pupil, analgesia, sensory disturbances and absent Achilles reflex on one side, and low-grade chorioretinitis. Wassermann in the blood, + + + +. Spinal fluid showed 7 cells to the cubic millimeter, albumin and globulin positive, Wassermann + —. Pain in the stomach began three years before admission, associated with severe headache and some fever. Patient received four injections of neosalvarsan intravenously without any subjective improvement. Dizziness, headache, and pain in the stomach continued. Jan. 13, 1914, first intradural injection, 3 mg. of neosalvarsan, was followed by marked improvement in subjective symptoms. Girdle sensation and pain in stomach were markedly less. Patient was discharged, Jan. 24, 1914, much improved in general health, having gained 7 pounds in weight. He was referred back to his physician for mercurial treatment, and has not been heard from since.

The striking features in this case are the lack of improvement following intravenous injections and the prompt disappearance of subjective symptoms after a single intradural injection.

CASE 11.—T. W., a man, aged 37, with tabes dorsalis, had contracted syphilis ten years ago. Treatment with pills had been received. Onset of tabetic symptoms had been noted with the beginning of the Charcot knee about one year before admission. Prominent symptoms were Charcot joint of the left knee; Argyll Robertson pupils; absent deep reflexes; marked Romberg; and low-grade chorioretinitis. Wassermann in the blood was positive. Patient was given three injections of neosalvarsan intravenously and said that he felt decidedly better from them. Jan. 24, 1914, spinal puncture showed 40 cells to the cubic millimeter, a marked increase in pressure, albumin and globulin positive, and Wassermann positive. Intradural injection of neosalvarsan, 4 mg., was followed by no untoward symptoms save an accentuation of lightning pains which, however, very soon subsided. Feb 5, 1914, spinal puncture showed 7 cells to the cubic millimeter, albumin and globulin only slightly increased and Wassermann negative in the spinal fluid. Second intradural injection, 6 mg. of neosalvarsan, was followed by absolutely no untoward symptoms but very marked improvement in all features. Station is steadier. March 25, 1914, spinal puncture showed 2 cells to the cubic millimeter, a slight increase in albumin and globulin and Wassermann reaction doubtful.

The striking features in this case are the prompt disappearance of the findings in the spinal fluid following the first injection, the slight increase of lightning pains followed by their diminution and the prompt improvement following the second injection. The patient was discharged from the spital, March 31, 1914, and referred back to his own phycian with instructions for continuation of treatment. He gained 4 pounds during his stay.

Case 12.—P. K., a man, aged 31, with cerebrospinal syphilis, entered the hospital for complete third-nerve palsy and extensive gummatous syphilids of the body. He had no treatment previous to outbreak of gummous lesions three years before. Third-nerve palsy on the left side came on suddenly three days before admission. Wassermann ++++. Prominent symptoms were third-nerve palsy; nodulo-ulcerative syphilid of the thigh; left-sided ptosis; iridoplegia; left-sided ataxic paraplegia and low-grade chorioretinitis. Cerebrospinal fluid, 48 cells to the cubic centimeter, Wassermann, albumin and globulin positive. Feb. 16, 1914, patient received his first intradural injection, 4 mg. of neosalvarsan, followed by slight radiating pains in the legs and slight difficulty in urination, lasting for only one day. There was marked improvement, cutaneous syphilids rapidly clearing up. Feb. 25, 1914, spinal fluid showed exactly the same changes as before. Second intradural injection, 6 mg. of neosalvarsan, was followed by no untoward symptoms. Patient felt perfectly well. March 9, 1914, cerebrospinal fluid showed 16 cells to the cubic millimeter, albumin and globulin much less, though still increased. Wassermann negative. March 16, 1914, the patient had entirely recovered from third-nerve palsy. At this time, however, he developed a more marked ataxic paraplegia and was forced to take to his bed. He improved slowly and was discharged from the hospital. Puncture taken shortly before his discharge showed 12 cells to the cubic millimeter and a negative Wassermann. He was referred back to his home physician, having gained about 5 pounds in weight. A letter from him of recent date reports gradual improvement from paraplegia.

The striking features in this case were the marked improvement in objective findings in the spinal fluid following the first intradural injection and the rapid clearing up of the oculomotor palsy and the advancing paraplegia. Objectively, the striking feature was the drop from 49 to 12 cells and from a positive to a negative Wassermann in the spinal fluid.

Case 13.—Mrs. A., aged 38, with tabes dorsalis, had contracted syphilis seventeen years previously; no treatment had been received. Onset of tabetic symptoms occurred four years ago. Clinical symptoms were Argyll Robertson pupils, slight ataxia, positive Romberg, absent deep reflexes, internal strabismus and lightning pains. Wassermann in the blood was positive. Spinal fluid showed 38 cells to the cubic millimeter, Wassermann, albumin and globulin positive. Injection, March 16, 1914, 3 mg. of neosalvarsan, was followed by absolutely no untoward symptoms and immediate cessation of lightning pains. Patient felt decidedly stronger; station was improved. Spinal puncture, April 1, showed 6 cells to the cubic millimeter, albumin and globulin still positive, but less, Wassermann + + +, gain in weight of about 10 pounds. Spinal puncture taken April 15, 1914, showed 11 cells to the cubic millimeter, albumin and globulin still increased, Wassermann still + + +. The patient was discharged, April 20, to continue antisyphilitic treatment in the form of inunctions and potassium iodid.

The features of note in this case are the prompt disappearance of lightning pains and the improvement in general condition following a single intradural injection of neosalvarsan. Objectively, there was a striking drop in the number of lymphocytes in the spinal fluid.

Case 14.—Mrs. L. Mc., aged 32, with tabes dorsalis, denied knowledge of a syphilitic infection. Onset of symptoms began three years ago with attacks of vomiting. Prominent symptoms were gastric crises and inequality of pupils—left did not react to light. Wassermann in the blood was negative. Spinal puncture showed cells; these were not counted, owing to contamination; albumin and globulin were markedly increased. Wassermann ++++. First intradural injection, March 23, 1914, 4 mg. of neosalvarsan, was followed by immediate cessation of vomiting. Patient became hungry and ate well. A few days later, however, she began to vomit again and left the hospital, March 27, 1914, and has not been heard from since.

In this case the striking feature was the immediate cessation of vomiting following the first intradural injection and a recurrence of the symptoms after a few days. A second injection could not be given in this case.

Case 15.—J. S., a man, aged 37, with tabes dorsalis, was transferred from the department of neurology for treatment. He contracted syphilis fifteen years ago. Liquid medicine had been taken for one month. Onset of tabetic symptoms took place one year ago with vomiting. Prominent symptoms were gastric crises and sluggish pupillary reaction. Wassermann in the blood, ++++. Cells of the spinal fluid were not counted because of contamination. Albumin and globulin were positive. April 2, 1914, cells were not counted, Wassermann, albumin and globulin positive. Patient had a slight nausea. First intradural injection, March 1, 1914, was followed by vomiting, pain in the hips and legs, and suppression of urine. Catheterization was found necessary. This patient has not done well since his injection. He developed retention, cystitis with fever and decubitus. Catheterization was found necessary twice daily. Patient is still in the hospital and his condition remains stationary. Puncture taken one week following the injection showed 4 cells to the cubic millimeter, albumin and globulin much less, Wassermann + + +. The features of note in this case are the objective improvement in the cord findings without any corresponding subjective improvement.

Of the fifteen patients thus treated, two are dead; seven cases are markedly improved, both subjectively and in the objective findings in the cerebrospinal fluid; three patients having general paresis were given only a single injection and showed no improvement, nor were they made any worse by the treatment; one patient showed an improvement after a single injection with a relapse of symptoms, and no subsequent treatment was given; and one patient was markedly improved with respect to the oculomotor palsy, but showed progression of the spinal feature of the disease in a progressive paraplegia.

The cases that have thus far been treated are too few to permit the drawing of any but tentative conclusions. It is apparent to me from my experience that in general, cases with cerebrospinal syphilis other than tabes or paresis have done decidedly better than those in which either one or both of those two conditions have been present. It is noteworthy that those cases of tabes have done especially well in which no bladder or rectal symptoms were present. It would seem, therefore, that cases in which such symptoms were present constitute contra-indications for the treatment as it is given at present.

The marked improvement in the objective findings in the spinal fluid following treatment, in practically all forms of syphilis thus treated, even in the absence of subjective improvement, lead one to hope that this form of treatment is along the right line for checking or, indeed, in some cases even curing central nervous involvement. I am led to believe that my earlier cases would have done better with injections of even smaller doses than those which were given. Subsequent injections will be given in small doses and diluted with a greater amount of the cerebrospinal fluid.

Cases to be thus treated should be carefully selected. For the present at least, this form of treatment should be restricted to those cases in which other forms of treatment have proved inefficient.

In all cases the danger of the treatment in its present unperfected state should be pointed out to the patient and his family, and the responsibility for its administration should be shared by them. It is to be hoped and expected that more careful study and selection of cases will prove the intradural injection of neosalvarsan a potent remedy in combating cases of cerebrospinal syphilis.

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HAY-FEVER

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PROPHYLAXIS AND CURE WITH POLLEN TOXIN

During the season of 1913 I treated nineteen cases of hay-fever with successful results in sixteen. Of three patients who were treated before the onset of symptoms, not one had an attack throughout the season; and of sixteen in whom treatment was begun after the onset, thirteen were cured. Relief of symptoms was very prompt, usually within an hour or two and seldom later than twenty-four hours.

The method used is essentially a modification of the active immunization suggested by Allen and others, with the addition of a bacterial vaccine in cases complicated with infection.

THE TOXIN

The toxin was prepared as follows: One gram of mixed pollen (250 mg. *Ambrosia artemisiaefolia*, 250 mg. *Ambrosia trifida*, and 500 mg. different varieties of *Solidago* found in this locality) was mixed with about 10 gm. of sterilized fine sea-sand in a sterile mortar; 100 c.c. of physiologic salt solution with 0.5 per cent. phenol (carbolic acid) was measured out and the pollen moistened with a portion of it. The mass was then ground for several hours, with the addition of portions of the salt solution, until the sand was reduced to an impalpable powder. The remainder of the salt solution was then added, the whole transferred to a sterile flask and allowed to stand at room temperature for twenty-four hours with frequent shaking. The fluid was then pipetted off, centrifuged and sealed in glass ampules, each containing 1 c.c. This constituted the stock solution and was stored in a cool, dark place.

DOSAGE AND ADMINISTRATION

For convenience, the unit suggested by previous workers was used. This unit is the quantity of toxin extracted from 1 microgram (0.000,001 gm.) of pollen. As prepared, each cubic centimeter of stock solution contained ten thousand units. From the stock solution two serial decimal dilutions were made containing one thousand and one hundred units to the cubic centimeter, respectively. By using a tuberculin syringe graduated in hundredths of a cubic centimeter it was possible to administer doses containing any desired number of units while the total volume of the dose never exceeded 1 c.c.

The site of injection was painted with tincture of iodin and the injection made subcutaneously in the usual manner. In no case was there any serious trouble at the site of injection.

The dosage in each case was determined entirely by the nature and extent of the reactions produced. Efforts to determine the proper dosage in advance by means of ophthalmic and cutaneous reactions were found to be unreliable. The interval between doses was from five to eight days at first, but this was reduced after a little experience to one or two days, depending on the time required for the reaction from the previous dose to subside.

TREATMENT AND REACTIONS

Three patients were given treatment beginning about a month before the time for the annual onset. All were adult men and had suffered annual attacks for eight, twenty and thirty-five years, respectively. The first received eight injections of from 25 to 1,000 units each; the second, six injections of from 25 to 700 units; the third, six injections of from 25 to 500 units. Doses were given at intervals of from five to eight days. Complete immunity resulted in each case.

In all true cases of hay-fever the administration of a proper dose of toxin is followed by a well-marked reaction. This begins in from half an hour to two hours and is characterized by an exaggeration of the usual symptoms of an attack; sneezing, lacrimation, itching of the eyes, cough, dyspnea in asthmatic subjects, and sometimes edema and urticaria. In the third case reported above, the third dose was increased from 100 to 300 units after an interval of seven days and was followed by a reaction which continued for about eighteen hours and caused the gravest alarm; there was a violent general urticaria, severe edema of the neck and throat, dyspnea and vertigo. The reaction terminated abruptly, the patient felt no ill effects from it, and consented to go on with the treatment. He had never been able to go near ragweed when flowering, but last season he handled it with impunity.

August 11 a patient came with a well-developed and rather severe case of three days' duration. For seven years he had suffered annual attacks of such severity as to compel a change of climate. The present attack had begun in the usual manner. I gave him 5 units; the reaction came on in half an hour and continued for two hours, followed by a sudden remission of all symptoms. I gave him eight injections of toxin at intervals of one and two days, the last being 1,000 units. He had no further trouble and continued at his work.

Fifteen others were treated after the onset of the annual attack; the number included both sexes and their ages ranged from 20 to 60 years. The initial dose varied from 5 to 50 units and the final dose from 100 to 1,000 units. The interval between doses was usually one day, sometimes two and seldom greater than two.

Of the sixteen patients treated after the onset of the annual attack thirteen were cured. The three not benefited all began treatment more than a month after the onset of symptoms.

Vaccine as an Adjunct.—In all cases complicated by the presence of a bacterial infection injections of autogenous vaccine were given. Sometimes the vaccine was alternated with the toxin and in others it was given afterward. I consider this a very important element of the treatment which should never be neglected.

CONCLUSION

In spite of the conflicting theories concerning this form of treatment, the fact remains that the patients were cured—and "facts are stubborn things." Unfortunately the method here described is not suitable for use by the general practitioner. To use it successfully requires an intimate acquaintance with the various phenomena of immunity. I offer it in the hope that it may be taken up by others and so perfected that all physicians may use it to the end that humanity may be relieved of this most distressing of all non-fatal diseases.

THE ISOLATION OF SPIROCHAETA PALLIDA FROM THE BLOOD IN SYPHILIS

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The rabbit's testicle provides a favorable environment for the growth of *Spirochaeta pallida*. It has been extensively used for the study of experimental syphilis and for the demonstration of spirochetes in syphilitic material. Uhlenhuth and Mulzer[1] were the first to show the infectiousness of the blood in syphilis by the injection of rabbits; Nichols and Hough[2] and others have had positive results from the injection of cerebrospinal fluid; Graves[3] has reported spirochete-containing lesions with blood from tabetics and general paralytics.

In this study the blood from twenty-four untreated patients with early syphilis has been injected. It was withdrawn from a superficial vein of the forearm with aseptic precautions as in taking a blood-culture, and was defibrinated in a sterile test-tube. Two c.c. of the defibrinated blood were then slowly injected into the testicle. One animal was used for each case; in some cases one, in others both testicles were injected.

The latent interval after injection before lesions appeared varied from a little over one month in the earliest case to a little more than three months in the longest. In some the whole testicle was enlarged and quite hard; in others circumscribed nodules of cartilaginous hardness could be felt. The process sometimes showed marked thickening of both layers of the tunic. The nodules were usually situated in the upper pole of the gland, in or near the epididymis. In examining the testicle small lesions may be missed; the nodular feel of the normal epididymis and its apparent variation in size and consistency make the detection of these small areas of induration more difficult. In one of our animals the epididymis was noted as hard two months after the injection of a suspected blood, and the testicle was aspirated on two successive days with negative results. It was excised eight months after injection, and motile spirochetes were found in the dark field, although no gross lesions were evident.

As soon as lesions were palpable, the animal was etherized and the testicle excised. The cut surface of a nodule yielded a clear sticky fluid, which contained large numbers of spirochetes. In microscopic sections this mucinous exudate was found in a loose fibrous reticulum, and in tissue stained by Levaditi's method the organisms were present in these areas in the largest numbers. Uhlenhuth and Mulzer[4] and Noguchi[5] consider this exudate peculiar to syphilitic orchitis of rabbits.

THE PROTOCOLS OF THE POSITIVE CASES ARE AS FOLLOWS:

Case 1.—Man, aged 35. Primary lesion of penis, two weeks' duration. Glands in groins. No secondaries. Wassermann weakly positive. Feb. 15, 1913, blood injected into both testes, Rabbit 14. Spirochetes were found in the dark field and in Levaditi sections.

Case 2.—Man, aged 29. Primary lesion of penis, eighteen days' duration. Multiple glands in groins. Primary side of tongue twenty-three days. No eruption. Wassermann strongly positive. Feb. 29, 1913, blood injected into left testis, Rabbit 15. April 20, 1913, diffuse orchitis and periorchitis with spirochetes in dark field and in Levaditi sections.

Case 3.—Man, aged 28. Primary lesions of penis, four weeks' duration. Multiple glands in groins. No skin eruption. Wassermann strongly positive. March 29, 1913, blood injected into both testes, Rabbit 29. June 15, 1913, left circumscribed nodule in epididymis with spirochetes in dark field and India ink smear; none found in Levaditi sections.

Case 4.—Man, aged 22. Primary lesion of penis, two months' duration. General papular eruption. Wassermann strongly positive. Oct. 21, 1912, blood injected into both testes, Rabbit 4. Jan. 1, 1913, left diffuse orchitis, spirochetes in dark field and Levaditi sections.

Case 5.—Woman, aged 18. Papules about mouth, forehead and scalp. Fading macular eruption over body. General glandular enlargement. Condylomata about anus. Wassermann strongly positive. Jan. 7, 1913, blood injected into left testis, Rabbit 7. Feb. 23, 1913, diffuse orchitis with periorchitis. No spirochetes found in dark field. In the Levaditi sections they were numerous.

Case 6.—Man, aged 30. Primary lesion of penis with general roseola. Wassermann strongly positive. Feb. 20, 1913, blood injected into both testes, Rabbit 16. April 18, 1913, left diffuse orchitis with spirochetes in dark field and Levaditi sections. In the right testicle nodules could be felt. It was excised Sept. 23, 1913, and spirochetes were found in the dark field.

Case 7.—Woman, aged 26, pregnant five months. General roseola. Wassermann strongly positive. Feb. 21, 1913, blood injected into left testis, Rabbit 19. April 22, 1913, circumscribed nodule in epididymis with spirochetes in dark fields and Levaditi sections.

Case 8.—Woman, pregnant six months. Husband treated in clinic for syphilis the previous summer. Brilliant maculopapular eruption over body. Wassermann strongly positive. March 22, 1913, blood injected into both testes, Rabbit 26. May 18, 1913, left diffuse orchitis, spirochetes in dark field and Levaditi sections. The right contained palpable nodules and was excised July 8, with spirochetes in dark field.

Case 9.—Man, aged 29. Primary lesion of penis, two months' duration. General glandular enlargement. Was-

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[4] Uhlenhuth and Mulzer: Arb. a. d. k. Gsndhtsamte, 1913, xliv, 307.

[5] Noguchi: Jour. Exper. Med., 1912, xv, 202.

sermann weakly positive. April 7, 1913, blood injected into both testes, Rabbit 35. July 21, 1913, right circumscribed nodule in epididymis with spirochetes in dark field and in India ink smear. None found in Levaditi sections.

Case 10.—Woman, aged 19. Ulceration on labia. General glandular enlargement. Roseola on body. Wassermann strongly positive. April 8, 1913, blood injected into right testis, Rabbit 36. Nov. 29, 1913, testis excised, showed no gross lesions. Spirochetes in dark field and India ink smear; none found in Levaditi sections.

The remaining 14 cases gave negative results. Four were in the primary stage and 10 showed secondary lesions. In the whole series there were 7 primary cases, the blood from 3 of which, or 41.5 per cent., gave positive results. The other 17 were in the secondary stage and gave 7 positive inoculations or 41.2 per cent.

This method of investigation offers a ready means for the demonstration of *Spirochaeta pallida* in the peripheral blood and furnishes convincing proof that syphilis is a chronic septicemia. It further shows that the blood-stream is invaded at an early period, before the skin manifestations are evident. By this means, without encountering the difficulties attending the isolation of the spirochete from contaminated surface lesions, we can obtain a strain of *Spirochaeta pallida* whose identity cannot be called in question.

393 Beacon Street.

THE LEUKEMIAS UNDER BENZOL

A REPORT OF THREE CASES WITH A METABOLISM STUDY OF AN ACUTE LEUKEMIA *

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Selling,[1] in 1910, reported on the toxic effects of benzol as witnessed in two fatal and a number of mild cases. The fatal cases were clinically toxic purpuras with aplastic anemia. In these patients the red cells were reduced to 640,000 and 1,150,000, respectively, but the leukopenia was still more marked, reaching 480 cells per cubic millimeter in one case and 140 in the other. The reduction in granular cells was greater than that of the lymphocytes. At necropsy, the bone-marrow in each case was found to be aplastic.

In experiments on rabbits, Selling noted that benzol caused a marked reduction in the white cells, in one case to 20 cells per cubic millimeter. The red cells were usually not below 4,000,000, though the prolonged action of benzol affected them also. The bone-marrow of these rabbits was aplastic as regards leukocytes, but little altered as regards the erythrocytes. Selling found the action of commercial benzol and pure benzol (benzene, C_6H_6) identical and agrees with Santesson[2] that the essential toxic agent is benzene. He concludes that it is an intense poison for the white cells of the blood.

Barker[3] remarks that this action of benzol was clearly before the profession in 1910. No one, however, made practical application of it until von Koranyi[4] conceived the idea of using it in the treatment of leukemia. The reports in 1912 of von Koranyi and his assistant Kiralyfi[5] on their successful use of the drug attracted the attention of Billings[6] in this country, who later reported a short series of cases. It is likely that the majority of those who read of the very remarkable effects of benzol on the leukocytes resolved to employ it in their own cases of leukemia and we were able to find twenty-nine publications[7] of its use in this respect since the original article of von Koranyi. Nearly half of these appeared in the Vienna journals and but five in American journals. Most of the leukemias were of the chronic myeloid form, a few were of the chronic lymphatic variety and one, reported by Klein,[8] was a subacute myeloblastic leukemia. Klein used it in three acute myeloblastic leukemias, but states that his observations in these cases were not of sufficient duration or extent to warrant him reporting them. Observations, with few exceptions, agree that there is a marked and rapid reduction in leukocytes. The permanency of effects and the question of actual cure are doubtful matters which the future will settle.

The cases here reported are representative of the three principal varieties of leukemia and of the varying conditions under which they are met. The benzol used was Merck's medicinal; it was given in gelatin capsules in two cases and in olive-oil in the third. The dose was 3 or 4 gm. a day in the chronic cases and about 2 gm. in the acute form. None of the patients suffered subjectively from the drug.

Case 1.—*Chronic myeloid leukemia* in a young man of 27. He was first seen in February, 1912, and at that time had a spleen extending just below and to the right of the umbilicus. There was little or no hepatic or glandular enlargement; no history of hemorrhages; and the patient had no complaint except of weakness. The blood-picture is seen in Table 1. It will be noted that in the first year, the Roentgen ray was employed with excellent effect on the blood-count. It will then be seen that benzol was given in two periods of about six and eight weeks, respectively, with almost negative results. The action of benzol on the leukocytes is supposed to continue after its withdrawal, but here failed to cause a decided reduction. Since October, 1913, the patient's business required so much attention that he neglected his Roentgen-ray treatments and the white cell-count began to rise. *Without increasing the Roentgen-ray* applications, we began a third period of benzol. Two weeks later, the leukocyte-count was 29,000 cells lower and again two weeks later 34,000 cells lower, or almost half of that of the four weeks previous. The percentage of myelocytes was likewise reduced. It is of interest to note that while the previous or concurrent use of the Roentgen ray is supposed to further the favorable action of benzol, it did not so act in this case. On the contrary, the leukocidal effect of the drug was more in evidence in the third period when Roentgen-ray exposures were lessened.

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* Read, in part, before the Pathological Society of Philadelphia, Feb. 26, 1914.

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[3] Barker and Gibbes: Bull. Johns Hopkins Hosp., 1913, xxiv, 363.

[4] Von Koranyi, A.: Berl. klin. Wchnschr., 1912, xlix, 1357.

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[8] Klein, S.: Wien. klin. Wchnschr., 1913, xxvi, 357.

TABLE 1.—BLOOD-FINDINGS IN CASE 1, CHRONIC MYELOID LEUKEMIA

Date	White Cells	Percentage Myelocytes	Hb.	Red Cells	Remarks
2/16/12	314,000	33.4	27	2,980,000	Spleen below navel, began x-ray treatment.
3/15/12	242,000	....	37	....	....
3/30/12	157,000	....	50	....	....
10/ 5/12	110,000	....	70	....	....
4/ 2/13	99,000	....	75	....	....
4/24/13	32,600	18.0	75	....	Began benzol, continued x-ray.
5/ 2/13	48,600	12.5	70	....	....
5/10/13	37,800	17.0	80	4,700,000	....
5/17/13	27,600	15.0	90	4,840,000	....
5/27/13	31,400	18.0	90	4,550,000	....
6/ 6/13	26,000	14.5	95	4,780,000	Stopped benzol, continued x-ray.
6/14/13	23,800	12.0	80	4,650,000	....
7/ 9/13	43,200	12.0	100	4,830,000	Began benzol.
7/23/13	53,200	15.5	97	....	....
8/ 7/13	52,800	....	..	....	....
9/ 1/13	......	....	..	....	Stopped benzol, continued x-ray.
9/27/13	37,800	....	65	....	....
10/24/13	95,600	14.5	..	....	....
12/ 8/13	111,200	....	65	....	....
1/ 6/14	100,000	14.6	58	3,930,000	....
1/27/14	135,200	21.5	57	3,830,000	Began benzol, large mononuclears 17 per cent.
2/ 9/14	106,000	18.5	48	3,580,000	....
2/23/14	72,400	10.5	55	3,730,000	Spleen same size.
3/ 9/14	43,600	12.0	53	3,830,000	Large mononuclears 25.5 per cent.
3/24/14	30,000	7.5	57	3,320,000	Large mononuclears 37 per cent.
3/28/14	......	....	..	....	Stopped benzol.
4/ 6/14	37,000	9.5	60	3,790,000	Two megacaryocytes.
4/21/14	33,000	9.5	55	4,060,000	One megacaryocyte 32.9 per cent.; large mononuclear.

A recent feature is the increase in the percentage of large mononuclear or hyaline cells. These formerly ran from 4 to 6 per cent., but in January, 1914, rose to 17 per cent. and since then have increased until they average over 30 per cent. Their large size, deep-staining nucleus and hyaline protoplasm make them a striking part of the blood-spread. Furthermore, many of the recorded basophils, which have also increased (in the last examination to 17.3 per cent.), we believe to be degeneration forms of these cells. This tendency to reversion from myelocytic to a myeloblastic type has been noted by Ehrlich,[9] Wilkinson[10] and others toward the end of the disease. It may here possibly indicate an effect of benzol on the bone-marrow. Finally, it is noteworthy that the spleen of this patient is just about the same size as on the first examination two years ago, and on no occasion has been found above or to the left of the navel. The patient is still under treatment.

Case 2.—*Chronic lymphatic leukemia* in a man of 57. He was first seen, April 23, 1913, and had complained of symptoms referable to a leukemia for about nine months. He exhibited distinct glandular enlargements on both sides of the neck and axillae and less marked ones in both groins. There was a glandular swelling in the right axillae the size of a golf-ball. The spleen could just be felt at the rib edge on inspiration. The blood-findings are seen in Table 2. The patient had had no Roentgen-ray treatment and was put at once on benzol. It will be seen that after a preliminary rise, there was a decided fall of leukocytes reaching normal in six weeks, when the benzol was stopped. With this, there was a decided decrease in the size of the glands, notably of the one in the right axilla. The spleen, however, remained the same size and was still enlarged when examined Sept. 17, 1913. On that date, Roentgen-ray treatment was instituted, and three weeks later a second period of benzol was begun. In a month, the white count was down again and the benzol was stopped but the Roentgen ray continued. The effect on the red cells was at first a mild improvement and later a drop. Barker mentions that the blood-formula in lymphatic leukemia remains practically unchanged under benzol though the leukocytes are reduced to normal; but in this case there was a temporary improvement in the formula as well, the percentage of lymphocytes falling and the polynuclears rising from 1.8 to 53.5 per cent.

The patient now passed out of our hands and entered the University Hospital, where the count in January, 1914, was 12,200 leukocytes with 39 per cent. polynuclears and 55 per cent. lymphocytes. Later, he suffered cerebral thrombosis and returned home. We examined him again May 1, 1914, an interval of six months having elapsed without benzol or Roentgen-ray treatment. His leukocytes were only 16,000, but the percentage of lymphocytes had risen to 82.2 per cent. The glands were slightly larger and the spleen also had increased somewhat in size. The patient generally was in fair shape and able to come to the hospital for examination. He is still under observation.

Case 3.—*Acute leukemia* in a woman of 42. After a succession of boils, the patient suffered a characteristic onset with an attack of tonsillitis, but this had subsided when she was admitted to the Hahnemann Hospital complaining of great weakness and smothering in the chest. Physical examination gave no evidence of pathologic enlargement of the external or internal lymph-glands. The spleen could be felt several centimeters below the rib edge. Later, there was slight enlargement of the cervical glands, but not beyond the normal extreme. The patient was obviously anemic. There was ecchymosis on the left foot, a few petechiae on the abdomen and a small bleeding ulcer on the mucous membrane of the lower lip. The eye-grounds were free. The bleeding-time was decidedly increased. A blood-culture was negative. The case ran a febrile course quite similar to typhoid, and the patient died eighteen days after admission to the hospital. The necropsy findings were characteristic of an acute myeloblastic leukemia, and the

TABLE 2.—BLOOD-FINDINGS IN CASE 2, CHRONIC LYMPHATIC LEUKEMIA

Date	White Cells	Percentage Small Lymphocytes	Hb.	Red Cells	Remarks
4/23/13	114,000	97.8	85	....	Began benzol.
5/ 2/13	155,800	96.6	85	....	....
5/ 9/13	78,600	97.8	68	3,930,000	....
5/16/13	42,800	93.6	85	4,900,000	Axillary glands reduced.
5/23/13	24,800	92.5	88	4,520,000	....
6/ 3/13	8,200	64.0	85	3,750,000	Stopped benzol.
6/11/13	7,000	60.8	92	4,340,000	....
6/24/13	8,200	52.0	90	4,010,000	Spleen same size.
7/ 8/13	10,400	64.0	95	4,380,000	One normoblast.
7/22/13	8,400	73.5	100	....	....
8/12/13	17,400	....	..	....	....
9/17/13	15,800	94.0	70	4,480,000	Started x-ray.
10/ 6/13	40,400	....	..	....	Started benzol. Continued x-ray.
11/ 4/13	5,600	77.0	65	4,650,000	Stopped benzol. Continued x-ray.
11/13/13	7,400	46.5	68	3,500,000	....
5/ 1/14	16,000	82.2	62	4,310,000	....

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[9] Ehrlich, quoted by Emerson: Bull. Johns Hopkins Hosp., 1907, xviii, 71.

[10] Wilkinson, R.: Lancet, London, 1903, i, 1739.

marrow-spreads and section showed cells in all respects comparable with those found in the blood films. There was a supernumerary spleen about the size and weight of the normal organ, while the spleen proper weighed 750 gm. The liver was examined histologically for necroses, as described by Muhlmann[11] in a case of leukemia after the use of benzol, but the findings were negative in this respect.

The blood-findings are in Table 3. The white count was comparatively low on the first examination, but this is not uncommon. In two of Kelly's[12] four cases, the leukocytes were 9,000 and 17,000, respectively; in one of Emerson's[13] cases, the first count was 12,000; in McCulloch's[14] case, the first count was 15,000. In most of these cases, there was a subsequent rapid rise to high figures. Our patient showed but slight change until the day before her death, when the white cells numbered 96,000. Benzol was started on the third day and continued for eight days and may possibly have prevented the not unusual leukocytic rise; but it did not effect a reduction. The effect, if any, on the red cells was a steady drop. Streptococcus vaccine did not improve matters. As far as we know, this is the only recorded case of acute leukemia in which benzol was used.

TABLE 3.—BLOOD-FINDINGS IN CASE 3, ACUTE LEUKEMIA

Date	White Cells	Percentage Large Mononuclear	Hb.	Red Cells	Remarks
11/ 3/13	20,400	68	39	2,060,000	....
11/ 4/13	22,000	..	39	....	....
11/ 5/13	25,600	..	..	....	Began benzol.
11/ 6/13	19,600	80	28	2,062,000	....
11/ 7/13	26,000	76	39	2,330,000	....
11/ 8/13	20,600	71	29	1,880,000	....
11/ 9/13	......	..	..	....	Gave streptococcus vaccine.
11/10/13	20,800	84	28	1,900,000	Gave streptococcus vaccine
11/11/13	26,800	83	28	2,000,000	Gave streptococcus vaccine. One normoblast.
11/12/13	20,000	76	25	1,200,000	....
11/13/13	32,000	77	26	1,250,000	Stopped benzol.
11/14/13	26,000	86	18	1,180,000	One normoblast.
11/15/13	30,000	92	18	1,200,000	One normoblast.
11/16/13	96,000	89	20	....	Three nucleated reds.

Study of the blood-spreads from these leukemias suggests the office of benzol in effecting some of the changes seen. The poor staining qualities of some of the polynuclears and myelocytes are very common. We do not think the basophilic degeneration seen in the neutrophilic myelocyte is seen so frequently. And of special note in the myeloid leukemia are varying degrees of basophilic degeneration involving the recently appearing large non-granular mononuclears and confusing them with ordinary basophils. Further, eosinophils showing basic degeneration were occasionally observed. The low vitality of these abnormal cells may account for the degenerative changes, but the possibility of the accessory action of benzol is to be considered. The fragility of the leukocytes in leukemia, especially in the acute form, is well known. It is shown in the distorted and somewhat swollen forms seen in large numbers in the chronic lymphatic leukemia here reported. It was noted that these types increased decidedly after the administration of benzol. In cells of the acute leukemia, all degrees of granulation were seen in addition to the pure hyaline forms, indicating the difficulty of establishing a characteristic type of cell for this variety and suggesting that these are degenerative rather than physiologic granules. Experimental work to test the ability of benzol to cause basophilic and other leukocytic granulations might produce interesting results. Pseudopods in the large mononuclears of the acute leukemia were relatively numerous in a spread made the day after the eight days' treatment with benzol.

METABOLISM STUDIES

In the case of acute leukemia, metabolism studies were carried out by one of us (Pearson), over a period of five days. These were facilitated by the fact that the patient craved and took nothing but buttermilk for a week before her death. She was on this diet two days before the experiments were begun. The work was done only on the urine. The fecal losses may be estimated and allowed for, as the defect is probably not great with but one rather small movement a day. There were no losses by hemorrhage during or just preceding the period.

In Table 4 is shown the intake and output of nitrogen and phosphorus and the output of uric acid for five days.

The nitrogen in the buttermilk and the urine was estimated by the Kjeldahl-Gunning method. The phosphates of the milk were determined by the gravimetric method; those of the urine by titration with a standard uranium nitrate solution. Only one analysis was made of the buttermilk, as it was considered fairly uniform in composition. The uric acid was estimated by the Hopkins-Folin method.

It will be observed that there is a negative nitrogen balance of 6.64 gm. for the five days, and if we allow an additional gram a day for the feces, we enlarge the negative balance to 11.64 gm. This loss, however, is comparatively slight contrasted with the remarkable deficiencies in many reported cases of acute leukemia, in which a negative nitrogen balance of 20 gm. or more daily does not seem to be uncommon. It will be recalled that the white blood-count in this case was quite low most of the time, averaging from 20,000 to 30,000, and it would be interesting to know if the nitrogen and other losses roughly parallel the height of the leukocyte count. In Edsall's[15] case, in which he estimated the negative nitrogen balance for twenty-four hours as 27 gm., the leukocyte-count was 466,640.

TABLE 4.—METABOLISM OBSERVATIONS IN CASE 3, ACUTE LEUKEMIA

Date	Buttermilk Taken, c.c.	Nitrogen in Buttermilk gm.	Nitrogen in Urine, gm.	P_2O_5 in Buttermilk gm.	P_2O_5 in Urine, gm.	Uric Acid in Urine, gm.
11/10/13	887	4.548	.....	2.042	.....	.....
11/11/13	1,567	8.034	.....	3.608	.....	.....
11/12/13	2,661	13.653	7.89	6.127	0.814	0.265
11/13/13	2,306	11.824	16.13	5.310	1.269	0.938
11/14/13	2,129	10.915	12.20	4.902	1.725	0.669
11/15/13	1,952	10.005	15.74	4.493	2.173	0.947
11/16/13	1,538	7.883	8.96	3.540	1.461	3.276
Total five days (12 to 16 inc.)........	.....	54.280	60.92	24.372	7.442	6.095

On the other hand, the phosphorus pentoxid loss in the urine was 7.442 gm. for the five days, and if we allow 5 gm. as the fecal loss we have an output of 12.442 gm. of phosphorus pentoxid, which, against the intake of 24.372 gm., gives a positive balance of 11.93

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11. Muhlmann, E.: Deutsch. med. Wchnschr., 1913, xxix, 2083.
12. Kelly, A. O. J.: Tr. Assn. Am. Phys., 1903, xviii, 481.
13. Emerson, C. P.: Bull. Johns Hopkins Hosp., 1907, xviii, 71.
14. McCulloch: Montreal Med. Jour., 1904, xxxiii, 580.
15. Edsall, D. D.: Am. Jour. Med. Sc., 1905, xxx, 589.

gm. Considering the urinary output of phosphorus pentoxid alone, it is not far from the estimated normal. All this is contrary to the usual findings in this disease, though, as Chittenden[16] has pointed out, the organism is capable of storing up comparatively large quantities of phosphorus without close relation to simultaneous changes in nitrogen metabolism.

The uric acid figures, while not excessively high, are a little more consistent with the usual ones of acute leukemia, and seem to bear a fair relation to the leukocyte-count. It will be noted that on the last day when the leukocytes reached a maximum, the uric acid excretion jumped proportionately, amounting to 3.276 gm.

The nitrogen partition as regards urea, uric acid and ammonia is seen in Table 5.

TABLE 5.—NITROGEN PARTITION IN CASE 3, ACUTE LEUKEMIA

Date	Quantity Urine, c.c.	Specific Gravity	Nitrogen as Urea, gm.	Nitrogen as Uric Acid, gm.	Nitrogen as Ammonia, gm.	Per Cent. Nitrogen as Urea	Per Cent. Nitrogen as Ammonia
11/12	1,153	1.009	6.09	0.088	0.19	77.3	2.6
11/13	2,218	1.011	12.98	0.313	0.04	80.0	0.3
11/14	1,868	1.010	8.84	0.223	0.10	72.5	0.8
11/15	2,070	1.011	9.82	0.316	0.04	62.4	0.3
11/16	1,124	1.011	6.58	1.093	0.007	73.4	0.1

The urea determinations were done according to the method of Benedict and Gephart. The amount of nitrogen as ammonia was subtracted from the nitrogen determined by this method. The amount of nitrogen as ammonia was determined as directed by Schlössing. The nitrogen as uric acid was computed from the uric acid totals by the molecular relationships. The most marked feature seems to be the reduction in the ammonia.

It is difficult to say whether or not the benzol administered was a factor in the results obtained. It was given for a week preceding the metabolism studies and stopped on the second day after they were begun. No striking changes followed its removal. Sohn[17] studied the effects of benzol on metabolism in three non-leukemic cases and one of myeloid leukemia. These cases were put on a purin-free diet for two or three days; then given benzol for three to five days; and this was followed by a short third stage with the patient off benzol. Metabolism studies were carried out through the three stages. Sohn found an increase in the neutral sulphur and a change in the relation of the neutral sulphur to the sulphates; a reduction in the urea nitrogen in relation to the total nitrogen, and an increase in the ammonia. It will be noted that in our case the output of ammonia was decreased.

SUMMARY

1. In a case of chronic myeloid leukemia under benzol, treated previously and concurrently with Roentgen rays, the leukocyte-count remains relatively low though the formula is changed in favor of large mononuclears. The spleen remains the same size, but the patient generally is improved. The patient was under observation two years.

2. In a case of chronic lymphatic leukemia, benzol, without Roentgen assistance, restored the white count to normal. Later, Roentgen rays were used for a short period. The patient has now been without benzol or Roentgen ray for six months, yet the leukocyte-count remains low and almost within normal limits. The formula, however, has returned to a high percentage of lymphocytes. The spleen did not diminish in size and is now further enlarged. The patient was under observation one year.

3. In a case of acute leukemia, benzol seemed to have had no effect one way or the other on the blood or the size of the spleen. The necropsy findings were typical of acute leukemia; there were no liver necroses or damaging effects of benzol apparent. Metabolism studies did not reveal any marked losses.

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[16] Chittenden, R. H., and Mendel, L. B.: Osler's Modern Medicine, Ed. 1, i, 650.

[17] Sohn, I.: Wien. klin. Wchnschr., 1913, xxvi, 573.

THE VALUE OF THE DETERMINATION OF THE CHOLESTERIN CONTENT OF THE BLOOD IN THE DIAGNOSIS OF CHOLELITHIASIS

PRELIMINARY REPORT *

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The recent investigations of Aschoff and Bacmeister[1] have shown that gall-stones are to be classified, according to their composition, as follows:

1. Pure cholesterin stones.
2. Stratified cholesterin-calcium stones.
3. Cholesterin-pigment-calcium stones, which are most frequently found.
4. Composite stones, made up of cholesterin and a mantle of cholesterin and calcium.
5. Bilirubin-calcium stones, which are seldom found in the gall-bladder, but usually in the bile-passages of the liver itself.
6. Calcium carbonate stones, which are very seldom found.

That cholesterin plays a rôle, if not the most important rôle in the formation of gall-stones, is therefore evident. On the assumption that an excessive accumulation of cholesterin in the blood — a hypercholesterinemia — is the fundamental and primary etiologic factor in cholelithiasis, I have made a number of examinations which seem to verify that assumption. If my assumption is correct, we come far from curing a patient with gall-stones by the mere operative removal of the offending stones; for the primary cause—the hypercholesterinemia—persists (how long, I do not as yet know) after the operation. It is not my purpose at this time to go into the treatment of gall-stones either before or after operation. A great deal has been written on the subject, but only recently have we come to appreciate that in order to treat gall-stones intelligently and correctly, we must keep our eyes on cholesterin. I merely wish to report the results of several examinations I have been making.

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* Read in part, before the Clinical Society of the German Hospital, New York, May 8, 1914.

[1] Aschoff and Bacmeister: Die Cholelithiasis, Jena, 1909.

In making my quantitative cholesterin determinations, I proceeded as outlined in a previous paper.[2] This method of Weston and Kent,[3] with the colorimetric estimation of Grigaut,[4] I have employed a great many times, and continue to find it most satisfactory.

The proper interpretation of the cholesterinemia in any individual case is dependent on the presence or absence of such clinical factors as influence the cholesterinemia. Fever reduces the amount of cholesterin in the blood; nephritis, progressive arteriosclerosis and jaundice increase the amount of cholesterin in the blood.

The average normal amount of cholesterin in human blood-serum is 1.48 gm. per thousand c.c. serum. The recorded figures will be in terms of grams of cholesterin per thousand c.c. serum.

Case 1.—Man, adult. Urine negative. No fever. No jaundice. Wassermann negative. Signs and symptoms referable to the gall-bladder. Cholesterin = 1.30. Operation showed intestinal adhesions.

Case 2.—Man. No jaundice. No fever. Urine negative. Clinically either duodenal ulcer or cholelithiasis. Cholesterin = 1.70. Operation showed an ulcer.

Case 3.—Man. No fever. Slight arteriosclerosis. Urine showed mild nephritis with albumin and hyaline casts. No jaundice. Clinically duodenal ulcer. Cholesterin = 2.30. Operation showed an ulcer. In this case the sclerosis and nephritis explain the moderate hypercholesterinemia.

Case 4.—Man, aged 53. Temperature 100 F. Urine negative. Slight jaundice. Clinically, cholecystitis or gumma of liver. Wassermann negative. Cholesterin = 1.64. Operation showed inoperable carcinoma of stomach with liver metastases.

Case 5.—Girl, aged 17. Temperature 99.4 F. No jaundice. White blood-cells, 17,800. Polymorphonuclears, 74 per cent. Urine negative. Clinically, high appendicitis or cholecystitis. The Roentgen-ray report was positive for gall-stones. Cholesterin = 1.28. Operation showed appendicitis. Gall-bladder free.

Case 6.—Woman, aged 24. No fever. Urine negative. No jaundice. Wassermann negative. Clinically, duodenal ulcer. Cholesterin = 5.20. Operation showed gall-stones.

Case 7.—Woman, aged 42. No fever. Urine negative. Often jaundiced in past, but not at present. Stomach analysis negative for ulcer. History of gall-stone colic. Cholesterin = 2.83. Operation showed gall-stones.

Case 8.—Woman, aged 46. No fever. Urine negative. Moderate jaundice. No sclerosis. Clinically, undoubted gall-stones. Cholesterin = 3.26. Refused operation.

Case 9.—Woman, aged 37. White blood-cells, 17,200. Polymorphonuclears, 88 per cent. No jaundice. No fever. Urine negative. Symptoms referable to gall-bladder. Cholesterin = 3.14. Under treatment, condition cleared up and diagnosis of catarrhal cholecystitis was made.

Case 10.—Man, aged 45. Wassermann negative. No fever. Urine negative. No jaundice. Clinically, cholecystitis or tumor of liver. Cholesterin = 3.32. Operation showed cholecystitis and gall-stones.

Case 11.—Man, aged 47. No fever. Urine negative. Wassermann negative. Slight conjunctival icterus. Symptoms referable to gall-bladder, but no definite diagnosis made before operation. Cholesterin = 5.55. Operation showed chronic catarrhal cholecystitis with gall-stones.

Case 12.—Woman, aged 64. No jaundice. No fever. Urine negative. Tumor mass in right hypochondrium. Symptoms referable to stomach. Cholesterin = 5.57. Operation showed cholecystitis and gall-stones.

Case 13.—Young woman. No fever. Urine negative. No jaundice. Clinically, cholelithiasis. Cholesterin = 9.49. Operation showed gall-stones.

Case 14.—Woman. Temperature, 101.6 F. White blood-cells, 23,200. Polymorphonuclears, 88 per cent. Urine negative. No jaundice. Tumor in right hypochondrium. Clinically, either a cholecystitis or high appendicitis abscess. Cholesterin = 0.675. Operation showed chronic ulcerative cholecystitis with stone in cystic duct.

In this case, the comparatively high fever explained the hypocholesterinemia to me, but the surgeons refused to be convinced so easily. Twenty-two days after operation (at which time a cholecystectomy had been performed), I again examined the blood of this patient. She was free from fever. At that time, I obtained the figure of 4.55 for the cholesterin. This result led me to believe that the hypercholesterinemia of cholelithiasis persists after operation, and the following cases bear out that belief.

Case 15.—Woman, aged 30. Temperature, 101.6 F. Urine negative. No jaundice. Three days after cholecystectomy for subacute ulcerative cholecystitis and gall-stones, cholesterin = 4.77.

Case 16.—Woman. No jaundice. No fever. Urine negative. Four days after cholecystectomy for gall-stones, cholesterin = 2.13.

Case 17.—Woman, aged 65. No jaundice. Urine negative. Temperature, 101.6 F. Diagnosis of possible carcinoma of gall-bladder had been made. Five days after cholecystectomy for chronic suppurative cholecystitis, cholesterin = 2.10.

Case 18.—Woman, aged 19. Temperature, 99.6 F. Urine negative. No jaundice. Five days after cholecystectomy for chronic cholecystitis with stones, cholesterin = 3.77.

Case 19.—Woman, aged 47. Temperature, 101 F. Urine negative. No jaundice. Six days after cholecystectomy (bile draining from wound), for chronic ulcerative cholecystitis with stones, cholesterin = 3.36.

Case 20.—Woman, aged 57. No fever. Urine negative. No jaundice. Nineteen days after cholecystectomy for gall-stones, cholesterin = 3.96.

Case 21.—Young woman. No fever. Urine negative. Slight jaundice. Three weeks after cholecystectomy (gall-bladder draining bile) for gall-stones, cholesterin = 1.98.

In reporting these cases, I have presented only the relevant features of each, purposely omitting details.

SUMMARY

1. Almost all gall-stones are formed largely, if not entirely, of cholesterin.
2. A hypercholesterinemia seems to be the fundamental and primary etiologic factor in the formation of gall-stones, and this hypercholesterinemia is easily determined.
3. In cases of cholelithiasis without fever, a hypercholesterinemia is invariably found.
4. Conditions simulating cholelithiasis can be differentiated therefrom by a cholesterin-serum determination. Particularly does this apply in differentiating ulcus duodeni from cholelithiasis.
5. The hypercholesterinemia of cholelithiasis persists for a considerable length of time after the operative removal of the stones.
6. (With reservation), operation without removal of the bladder does not free the patient from the probability of subsequent stone formation.

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The Burden of Ill Health.—It is a truism that the efficiency of the social unit is conditioned more by his physical status than by any other one factor. That the inefficiency due to ill health, however, constitutes a burden to be borne by the whole of society rather than the individual is a concept which has been fully recognized only of recent years.—J. W. Schereschewsky, *Public Health Rep.*

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[2] Henes: Untersuchungen über den Cholesteringehalt des menschlichen Blutes bei inneren Krankheiten, Deutsch. Arch. f. klin. Med., 1913, iii, 122.

[3] Weston and Kent: Jour. Med. Research, July, 1912.

[4] Grigaut: Compt. rend. Soc. de biol., May 14, 1910.

DYSTROPHIA ADIPOSOGENITALIS (OF FROEHLICH)

WITH CLINICAL REPORTS OF TWO CASES

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Dystrophia adiposogenitalis was first described in 1901 by Fröhlich, who asserted that the abnormality was due to diminished function of the pituitary gland. Very few cases had been met in literature until the publication of Harvey Cushing's exhaustive studies, which have thrown considerable light on our knowledge of the function of this gland, especially in its diseased stages. Since then the number of reported cases has increased immensely, and many observers have added a great deal to the studies of this phenomenon.

Cushing[1] expressed the hope that many cases of changed hypophyseal secretion would be reported in literature to enable us to get a fair understanding of the different types and subdivide them accordingly. This of course may give a better understanding of the therapy. As stated before, his hopes were fulfilled. Many cases have been reported by competent observers and many facts of value have been added to the former findings. In the *Proceedings of the Royal Society of Medicine of 1912-1913*, in the Neurological and Ophthalmological Section, we find six cases presented and discussed freely by most of the members. I am taking the opportunity to add two cases of interest that came under my observation.

The general symptoms of this disease are so characteristic that most of the cases reported were by internists and neurologic men, who are usually consulted for general complaints. The bony changes found in these patients have not attracted the attention of these physicians, and thus very little is mentioned in their studies concerning the bony findings. It is really the task of the orthopedist to observe and to report osseous changes, but unfortunately very few cases come under his observation, as the patients usually remain under the supervision of the internist. We find, therefore, scanty mention of the subject in the orthopedic literature. If more cases were seen by the orthopedists, more studies would have been undertaken and another field would have been conquered by them. I studied my cases from an orthopedic point of view, and thus have not taken up many careful laboratory and experimental observations.

I shall first make a brief review of the general symptoms of this disease.

DEFINITION AND SYMPTOMS

The disease is characterized by a peculiar adiposity with a feminine type of distribution when occurring in males, that is, the fat over the hips, pubis and pectorals is markedly increased. The adiposity is general—not localized as in lipomas. There is aplasia of the genitals. The male genital organs are markedly diminished. Hypotrichosis (scanty growth of hair) is marked, so that there is no beard and pubic or axillary hair. The hair on the scalp is abundant. The voice remains juvenile. In women there is amenorrhea, while in men there is anaphrodisia. The skin is very smooth, transparent and notably free from moisture, almost like that of a child. The body temperature is subnormal. There is a marked tolerance for carbohydrate with polyuria (diabetes insipidus?). There are some psychical disturbances as irritability and mental dulness. Many cases of epilepsy have been reported. Skeletal changes are marked only in cases in which this process started before full stature was attained. (To this Lorain applied the term "infantilism.") The patients have a feminine type of skeleton with broad pelves with a certain degree of genu valgum. Tapering fingers and toes are present. The roentgenograms of the terminal phalanges show the tapering. The long bones show the persistent epiphyseal lines. "There is an epiphyseal thickening and a tendency to delayed ossification" (Goetch). Luger reports mandibular prognathism, some enlargement of the extremities and an increase in size of the skull. Many patients are considerably below normal stature.

If the condition starts after adolescence, the most characteristic symptoms are adiposity, amenorrhea or impotence, excessive thirst and polyuria. The secondary sexual characteristics which have developed before the deficient secretion began may retrogress. The cause of these phenomena is a diminished secretion of the pituitary gland, that is, hypopituitarism. The diminished secretion is caused by tumors pressing on the gland, mainly on the posterior lobe. The gland itself may be diseased, having angiosarcoma or carcinoma or cyst formation. It may be of note to mention the conclusions of Cushing in regard to the function of the different lobes of the gland. The anterior lobe influences the general growth of the body, particularly the skeleton, while the posterior lobe, including the pars intermedia, promotes the contractibility and increases the tone of plain muscular tissue generally as well as of the heart, and excites the activity of certain glands, namely, the kidney and mammary glands, and influences carbohydrate metabolism. On removal of the compressing tumor, many of the symptoms disappeared. The fat was diminished and the sexual functions were reawakened. Cushing was able to produce hypopituitarism experimentally. By removing a part of the gland, the animal became fat, lost the sexual activity and suffered from polyuria.

As there is a distinct interrelation between this ductless gland and the other members of the group, we find, in the group of diseases under discussion, symptoms of deficient secretion of the thyroid, adrenals (as shown by the pigmentation of the skin, asthenia and lower blood-pressure), parathyroids (as shown by the disturbance in calcium metabolism), and as mentioned before, sexual glands. Peritz offers the following hypothesis as explaining the peculiarities of the interrelation between the function of the hypophysis and the sexual glands. There is a chemical antagonism between the anterior and posterior lobes (gas metabolism and sugar). The posterior lobe and the sexual glands contain a secretion which is mutually stimulative. By atrophy of either one, the other one is injured and lack of balance arises between the parts of the hypophysis, so that in many of these patients we find symptoms indicating diminished secretion of one lobe and increased secretion of the other.

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[1] Cushing, Harvey: The Pituitary Body and Its Disorders, Philadelphia: J. B. Lippincott Company, 1912.

Peritz' theory can easily be supported by the observations of Newrath that "eunuchs owing to castration are very tall and present gigantic symptoms." The absence of the testicles probably causes an atrophy of the posterior lobe with the loss of control over the secretion of the anterior lobe, so that the oversecretion of the latter lobe causes an increase in skeletal growth.

The bony changes in dystrophia adiposogenitalis are due mainly to the lack of secretion of the anterior lobe, as that lobe influences the growth of the osseous system. In many cases absence or diminution in size only of single bones is found. Ascali and Legnani, in their records of experimental hypophysectomies, mention the occurrence not only of undergrowth of bone, but also of spontaneous fractures. This also explains the occurrence of coxa vara in these cases. Turney has reported a spontaneous fracture of the sternum between the manubrium and gladiolus.

To illustrate more vividly the influence of the pituitary on growth, we may just consider the cases of hyperpituitarism, or those due to an oversecretion of the gland. Under such condition, gigantism is produced if the oversecretion dates from childhood without interruption. If the oversecretion dates from adolescence, or if gigantism, for some reason or other, has been arrested, acromegaly is the result.

Another disease of interest, which may be mentioned in connection with the discussion on pituitary, is achondroplasia. Achondroplasia, or stunted growth, in which all the long bones are seriously hindered in their growth, is held to be due to a marked deficiency of the pituitary, probably following an early ossification of the base of the skull. Jansen, in his monograph on achondroplasia, advanced the theory that achondroplasia is caused by amniotic bands pressing on the centers of the epiphyses, and thus attributes achondroplasia entirely to intra-uterine pressure. He admits, however, that the deficiency of the pituitary may act as a contributory factor.

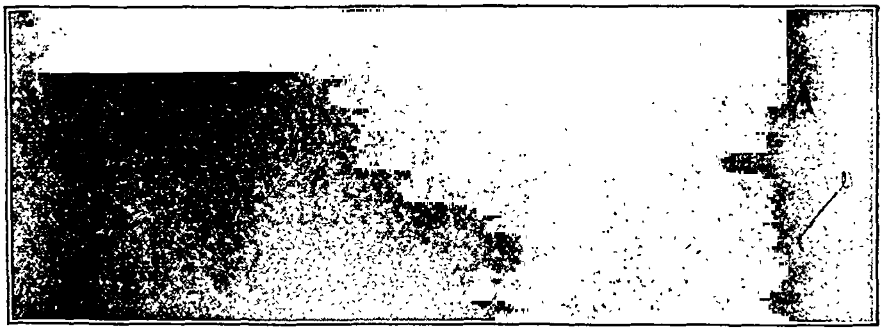

Fig. 1 (Case 1, taken April 16, 1912. Both hips).—*A*, the right one, which is normal, but shows the persistent epiphyseal line of the great trochanter (*l*). *B*, the left hip (diseased), showing coxa vara. It is bent at the middle of the neck, which gives one the impression of a fracture (*f*).

The skull changes in hypopituitarism are an enlargement of the sella, a thinning of the floor and a thinning and absorption of the dorsum and of the posterior clinoid processes. In intrasellar tumor, there is at first an enlargement of the sella, with increasing thinning of its floor and of the dorsum sellae; this is followed by absorption of the posterior clinoid processes and dorsum sellae. In the other types of tumor, there is at first absorption of the clinoid processes and of the dorsum sellae.[2]

The roentgenograms of the long bones show the delayed union of the epiphysis. The terminal phalanges are tapering.

Arthritis may follow the disturbance of any of the ductless glands as the pituitary, thyroid, thymus, ovary, testicle, parathyroid or pineal gland.

The treatment of these conditions consists mainly of operative methods if the pressing agent can be ascertained. The administration by mouth of extract of the pituitary, especially of the anterior lobe, is used as a routine treatment with some fair results. The other ductless glands should also be administered in conjunction with this gland.

REPORT OF CASES

CASE 1. *History.*—H. C., Hebrew, born in United States of Russian descent, clerk, aged 18, when first observed by me (in April, 1912), was referred by Dr. Isidore Abrahamson, to whom I am greatly indebted for the neurologic findings. Patient consulted us on account of inability to use his left hip, severe pain on walking and limping. Parents are alive and well. Patient has three normal brothers. There is no history of consanguinity.

Patient is the second child. Birth was normal. He walked at the age of 1 year, began to talk early, and was fairly bright as a child, according to the mother's statement. Patient was always surprised that his genitals were smaller than those of other boys of his age. He had diphtheria and scarlet fever when a child. There was no history of trauma. Adolescence was imperfect; childlike tendencies have persisted. Voice remained distinctly juvenile. At present it is more feminine than masculine. He has never shown any sexual instincts. For the last four years patient became very fat.

Present Illness.—This dates back nine months, when patient began to feel pain in the left hip, especially when rising from a chair. (He gives a vague report of having fallen about a month or two previous to the commencement of the pain and thinks he hurt himself on the left side.) The pain was radiating to the thigh and was boring in character. Patient had no pain in the knee at any time and no nocturnal pain. In a few weeks he noticed that he could not walk long distances without getting tired and could not bear weight on that foot for any reasonable length of time, even one hour; gradually he began to walk with a marked limp to the left. There were no headaches or disturbance of vision, but marked polyuria.

General Characteristics.—Patient is an overnourished, boyish-looking young man of full stature, height 5 feet 9 inches. There is no hair on face, pubis or axilla, while hair on the scalp is abundant. There is an excess of adipose tissue which is general but shows mainly a feminine distribution, being marked over the hips, pubis and pectorals. The weight was 165 pounds. The body has the configuration of a woman. Eyes and cranium are normal, and thyroid is apparently normal. Some bow kyphosis is beginning to be formed. Lordosis is increased. Abdomen is prominent. Fingers are normal except that slight hyperextension of all fingers is possible. Skin of upper extremities is very soft and smooth as that of a woman. The patient walks with a marked limp to the left side, and cannot flex the thigh on the abdomen. The motion of the adductors and outward rotators is also markedly impaired. When the thigh is flexed on the abdomen, the patient complains of severe pain in the hip. There is marked muscular spasm in left hip. The greater trochanter is palpable above Roser-Nélaton's line. The patient has a marked left genu valgum (inward bending of the knee or knock-knee). When the internal condyles of the femurs approach, the internal malleoli are separated about 2½ inches.

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[2] In some cases there is a history of trauma at birth or later, when the base is probably injured.

Measurements.[3]—R. A., 36¼ inches; L. A., 35 inches; R. U., 37¼ inches; L. U., 36 inches; R. T., 16½ inches; L. T., 16¼ inches; R. K., 21 inches; L. K., 20 inches; R. C., 13 inches; L. C., 12½ inches. Thus there is a shortening of an inch and a quarter and muscular atrophy. The measurements around the waist are 35½ inches on expiration and 36½ inches on inspiration. The circumference around the umbilicus is 37½ inches. There is a double talipes valgus (flat-foot). The toes are tapering. The penis is very small, almost as that of a child 6 months old. The scrotum is as small as that of a child 1 or 2 weeks old. Testicles are very small and extremely sensitive. Roentgenogram (Fig. 1) shows a marked coxa vara. The epiphyseal lines are ununited. The sella turcica is apparently normal. The urine is normal except that patient has marked polyuria. Though not exactly dull or stupid, the patient does not possess enough intelligence for his age, showing some infantile characteristics, as, for instance, crying in the waiting-room of the physician just because he had to wait for an hour to be treated.

Course and Treatment.—The patient was placed on pituitary extract, 0.12 gm. three times a day, and the dose slowly increased till the patient was getting daily 1.44 gm. and calcium glycerophosphate, 0.3 gm. three times a day. The weight was taken off the lower extremity by putting the patient on a brace, and massage to the defective muscles was ordered. The pain and the discomfort of the limb diminished so that the patient could walk long distances without getting fatigued. Pain disappeared entirely after three months. He retained a slight limp, however, but has learned to rotate the pelvis so that the limp became unnoticeable. His infantile characteristics began to show some improvement. The fat was diminished. The patient was so contented, however, with the relief of the pain and the discomfort of the limb, that he discontinued the pituitary extract after six months. He reported quite frequently to me that the hip caused him no trouble whatever and that he was able to pursue his occupation. His adiposity has increased after the stopping of the pituitary extract.

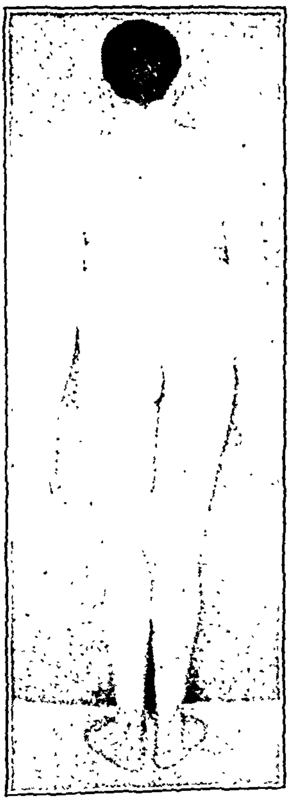

Fig. 2.—Case 2, showing the wide shoulders and the large crease in the middle of the spine with two smaller above that at each side. Note the absence of fat over the buttocks. The short thumbs are clearly shown.

This patient shows all the signs and symptoms of hypopituitarism dating from birth (infantilism of the Lorain type). There is probably a deficient secretion of the posterior lobe and the sexual glands, while the anterior lobe may produce hypersecretion or, according to Peritz, only normal secretion, but without the control of the posterior lobe. The coxa vara is probably due to a spontaneous fracture or bending of the neck of the femur because of diminished calcium metabolism. The trauma was the result rather than the cause of the fracture; hence the comparative mildness of pain.

Case 2. *History.*—D. H., Hebrew, born in the United States of Russian parents, single, aged 25 when first observed by me, in 1911, fur operator by trade, was admitted to the Montefiore Hospital complaining of pain and weakness in the back and marked deformity.

Parents are alive and well; there is no history of consanguinity. The patient is the first child, of normal birth; he began to walk at the age of 3½ and began to talk at a very late age. He was never bright and could not keep pace with the other boys at school. Hygienic surroundings were very poor. The patient had some children's diseases but does not remember the exact nature of these. There was no history of trauma. He was always taller and fatter than the average child of his age. At 13 he began to develop marked lordosis and broad shoulders so that the small children always used to laugh at him, saying: "Look how funny he walks." They were really the first ones to observe his abnormality.

Present Illness.—This dates back two years when patient began to feel frequent pains and weakness in the back. Pain was extending from the middorsal region to the hips. Patient was relieved in the sitting posture. Pain and weakness increased so that he had to give up his occupation. Finally he could not walk without supporting his spine. There were no cardiac, pulmonary or genito-urinary symptoms. Patient never had any sexual desire. There was excessive sweat over the back. He complained of lack of memory.

Medical Examination.—Patient is a very stout, even obese man, with marked broad shoulders, height 5 feet 8 inches. Hair on face, pubis and axilla is very scanty. Facial expression is rather idiotic with protrusion of upper lip. He has excess of adipose tissue which is general, showing mainly a feminine distribution, being marked over the hips, pubis and pectorals, but diminished over buttocks and thigh. Spinal motion is free. The torso is shortened. Measurements: Circumference around nipple line, on expiration, 36¾ inches, on inspiration, 37½ inches. Waist, at line of crease, 36 inches; at umbilicus, 41 inches. There is marked bowing of torso anteriorly. There are a deep furrow across the back 1 inch in depth and two smaller ones above. These creases disappear entirely when patient bends forward and keeps body at right angle with the extremities, showing that the entire trouble is in the adipose tissue and not in the spine (Figs. 2 and 3). The lordosis entirely disappears when patient sits down. The spinous processes of the sixth and seventh cervical vertebrae are prominent. Eyes are normal. Ear-lobes protrude too much outward. The thumbs are markedly shortened; they extend only half an inch beyond distal end of the metacarpal bones of the index-fingers. The terminal phalanges of thumbs are broad. Middle finger of both hands is deviated outward. Patient has a waddling gait. The big toes are shortened considerably. Thighs are particularly thin, as also are the buttocks. The scrotum is small. Testicles are undescended but can be pushed down and are found to be very small. Voice is more feminine than masculine. Thyroid gland is apparently normal. The patient is markedly idiotic, the memory very deficient. Clinical Findings: Urine is normal. Blood: Hemoglobin, 80 per cent., red blood-cells, 5,306,000; white blood-cells, 12,600; differential count: neutrophils, 61 per cent.; large lymphocytes, 14 per cent.; small lymphocytes, 13 per cent.; large mononuclears, 4 per cent.; transitionals, 5 per cent. Wassermann reaction is negative.

Roentgenographic Findings: Spine is normal. The long bones show no delayed union.

Course.—It is really unfortunate that more observations could not be made on the patient. He was too feeble-minded and could not interpret symptoms or obey orders. He left of his own accord, refusing all kinds of treatment.

This case is rather of an unusual type and bristles with difficulties in the way of diagnosis. The excess of fat in the torso, the undescended and small testicles, the hypotrichosis, the dull mentality and the absence of sexual desire would appear to be almost pathognomonic of Fröhlich's syndrome—dystrophia adiposogenitalis—dependent on changes in the pituitary and more particularly in the posterior lobe. But there are some difficulties that have to be answered before the diagnosis of Fröhlich's syndrome can be accepted. The adiposity is of a very remarkable type. While the condition of the upper limbs is about normal, that of the face and trunk is of excessive obesity, whereas that of the lower limbs is below normal and the buttocks are markedly emaciated. The sexual organs do not come up to the standard, and while the testicles are atrophied and undescended, the penis is about normal. The voice cannot be called distinctly feminine, but it is not masculine, either. Though the patient has some hair on the face and pubis, it is rather scanty and below par. His mental condition accords with Fröhlich's syndrome. A very close parallel distribution of fat in this patient will be found in Case 45 of Harvey Cushing, and in the case shown by Turney.[4] The fat over the spine shows the same creases as the case shown by F. F. Batten.[5] As the adiposity in this case fails to correspond with a case of dystrophia adiposogenitalis of pituitary origin, we have to think of other ductless glands, namely, the adrenals or sexual glands. With adrenal hyperplasia, the adiposity is general and is practically always associated with sexual precocity, of which there has been no indication in this case. Neither did this patient have adrenal tumor or pigmentation, which therefore speaks against adrenal hyperplasia. The scanty hair is not a symptom of adrenal hyperplasia, for in such cases we have increase of hair.

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[3] The following letters are used by orthopedists to designate certain definite points from which measurements are taken: R. A., distance from right anterior-superior spinous process of ilium to internal malleolus; L. A., left anterior-superior spinous process; R. U., umbilicus to right internal malleolus; R. T., circumference of the right thigh, in this case taken at 5 inches above lower border of patella; R. K., circumference of right knee; R. C., circumference of right calf.

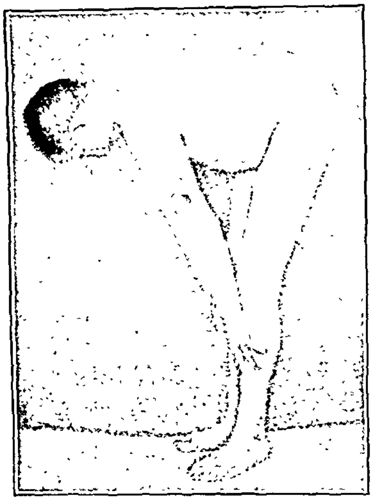
Fig. 3.—Case 2. The patient is bending body at right angle with the hips. Creases in the back entirely absent. The short big toes are easily distinguished.

Turning our attention to the sexual glands, we must recall that atrophy of these glands is always an accompaniment of pituitary diseases. As the testicles never descended, they were probably primarily involved, and the posterior lobe of the pituitary followed secondarily.

The occurrence of short thumbs and shortened big toes of both feet point directly to a disturbance in the secretion of the anterior lobe of the pituitary, which controls growth of bones.

This case is probably one of pituitary sexual gland syndrome, "polyglandular syndrome," the deficiency being mainly in the anterior lobe of the pituitary.[6]

I am greatly indebted to Dr. George R. Elliott for his kind and valued assistance, and to Dr. S. Wachsmann, the medical director of Montefiore Home and Hospital, for permitting me to report the second case.

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[4] Turney: Proc. Roy. Soc. Med., Sec. Neurol. and Ophth., 1912-1913, vi, p. lxxi.

[5] Batten, F. F.: Case of Hypopituitarism, Dystrophia Adiposogenitalis, Proc. Roy. Soc. Med., Sec. Neurol. and Ophth., 1912-1913, vi, p. xxxi.

[6] This patient was shown in 1912 by Dr. G. R. Elliott at a meeting of the orthopedic section of the Academy of Medicine, New York, and various opinions regarding the diagnosis were expressed by the members present. The diagnosis was cleared up only after careful study by Dr. Elliott and myself.

THE INFLUENCE OF HOOKWORM DISEASE ON THE EYES

A STUDY OF FIFTY-THREE CASES *

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Whenever a new disease is discovered or an old one brought into prominence, the students of the various specialties make determined and laudable efforts to establish a serious connection between the disease in question and their particular specialties. The newly found (in America) hookworm disease and the students of ophthalmology may well be expected, therefore, to become involved in some sort of investigation. In this particular case, then, let us assume that the incidence of eye lesions in connection with uncinariasis might be of interest and importance in two ways:

1. Is the hookworm infection a causative factor in the existing eye lesion?

2. If it is a causative factor, is the presenting eye lesion sufficiently distinctive or characteristic to be of diagnostic aid in the clinical recognition of uncinariasis?

Before attempting to answer let us briefly consider some salient facts and some of the observations of others appertaining to the questions before us.

GENERAL CONSIDERATIONS

Uncinariasis, or hookworm disease, belts the earth in a zone about 66 degrees wide, extending from parallel 36 north to parallel 30 south. Practically all countries between these parallels are infected, and these countries contain nearly 60 per cent. of the earth's population.[1] The incidence of the hookworm ranges from 50 to 90 per cent. of the population of many of these countries. Evidently it is a world problem. In the rural districts of our Southern states approximately 40 per cent. of the people are infected with this parasite.[2]

Zoologists state that there are two different species of hookworm, the European and the American. As all are agreed that their effects are the same when infecting the human family we may, in this study, disregard the helminthologic distinction. The general pathology and symptomatology of the disease has been well covered in a somewhat extensive literature, which I have carefully considered,[3] but comparatively little has been done in the direction of any special study of ocular conditions in connection therewith.

EYE LESIONS NOTED IN THE UNITED STATES

Hansell[4] has reported the case of a boy aged 15 infected with hookworm and exhibiting serous and hemorrhagic retinitis with characteristic appearances of retinal anemia.

A. W. Calhoun[5] has reported two cases of uncinariasis exhibiting cataracts in patients aged, respectively, 42 and 14 years.

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* Read before the Section on Ophthalmology at the Sixty-Fifth Annual Session of the American Medical Association, Atlantic City, N. J., June, 1914.

[1] Hookworm Infection as a World Problem, editorial, The Journal A. M. A., June 22, 1912, p. 1946.

[2] Fourth Annual Report, Rockefeller Sanitary Commission for the Eradication of Hookworm Disease, 1913.

[3] The bibliography is well known and easily accessible—especially the *Porto Rican* studies by Ashford, King and Igaravidez, and the American studies by Stiles.

[4] Hansell: Am. Med., 1901, ii, 412.

[5] Calhoun, A. W.: Ophth. Rec., 1904, xii, No. 7.

F. P. Calhoun[6] reports four cases of uncinariasis, three of the patients, aged, respectively, 20, 26 and 22 years, exhibiting cataracts, and the fourth showing recurring spontaneous hemorrhage from the upper conjunctival fornix of the right eye.

Mauldin[7] reports a case of hookworm disease showing "iridocyclitis approximating an interstitial keratitis."

Stiles[8] says that in uncinariasis the pupils of the eyes have a decided tendency to dilatation, the patient may show a blank stare, and that night-blindness is reported in a number of cases. In another place Stiles[9] says:

> If the patient is directed to stare intently into the observer's eyes, there will be noticed a symptom which it is difficult to describe, but which I have found more constant than almost any other noticed, namely: After a moment, the length of time apparently varying slightly, according to the degree of the disease, the pupils dilate and the patient's eyes assume a dull, blank, almost fish-like or cadaveric stare very similar to that noticed in cases of extreme alcoholic intoxication.

Dock and Bass,[10] after a brief consideration of eye-lesions reported by foreign authors, say:

> We have often noticed that the pupil dilates readily and usually remains wide, even in the presence of considerable light, but this is a common symptom of all severe anemias.

The authors of this book report no original investigations.

So far as I am aware, these are the only published reports of observations in the United States of eye-lesions in hookworm disease. In the spring of 1910 I reported to the Greenville (S. C.) County Medical Society the cases of two girls, aged 10 and 14 years. Both had interstitial keratitis, and both were typical hookworm cases, easily admitting of snapshot diagnosis. This was verified microscopically and the patients were turned over to a colleague for thymol treatment. It is true that the family history, while not positively indicating it, was not such as to be above a suspicion of hereditary lues; but the improvement in the ocular conditions after two or three thymol treatments was little short of astounding. I thought I had made a very interesting and valuable observation, and so I had; but the most interesting part of it came a year later when both patients died of tuberculosis — one of the commonly accepted causes of keratitis parenchymatosa.

EYE-LESIONS NOTED IN FOREIGN COUNTRIES

The European observations on the incidence of eye-lesions in uncinariasis are somewhat fuller, yet even so the literature on the subject is apparently not extensive.

M. Rampoldi,[11] reporting in 1880, noted that in hookworm patients who complained only of a slight asthenopia; or of the lack of ability to fix objects, he found ophthalmoscopically a whitish retinal reflex, characteristic of edema of this membrane. In some cases visual acuity was diminished. In the case of a woman who died of hydremia he found a true exudative retinitis, which reminded him of Liebreich's cases of splenic leukemia. There were also hemorrhages into the retina, and he found lymphoid elements deposited in great quantity between the retina and the choroid.

Von Nieden[12] notes in these cases a pale conjunctiva and shining sclera. With the ophthalmoscope he observes marked paleness of the blood-current in the contracted arteries, and tortuous veins; sometimes arterial pulsation, porcelain-colored papillae and, above all, characteristic hemorrhages, like those of pernicious anemia, which lie as isolated spots or broad patches on the periphery of the retina and show a tendency to fatty degeneration. There is, he says, sclerosis and fatty degeneration of the vascular endothelium as in the pernicious anemia of *Bothriocephalus latus*. The subjective symptoms he describes as central disturbance of vision with narrowing of the field, anesthesia of the retina, accommodative and muscular asthenopia, with diplopia and a tendency to nystagmus. In spite of this picture, as outlined, von Nieden expresses the belief that the conditions are not due to anemia, but to a toxin. Out of 3,686 cases examined by him he found three cases of bilateral blindness.

Nuel and Leplat[13] say that miners suffering with hookworm frequently show disturbances of vision consisting of fatigue of the eyes without appreciable lesion; a certain amount of hemeralopia, and frequently nystagmus. These authors examined eighty-one cases and found in five the following changes: One showed retinal hemorrhages; another showed numerous retinal hemorrhages in the right eye, especially in the nerve-fiber layer, and a pale papilla in the left eye, with veins somewhat engorged; two other patients showed infiltration of papilla and retina; while the fifth, an albuminuric, had a neuroretinitis.

A. Nieden[14] announces that the hemorrhages of the ocular fundus are characteristic. He says that they occur more in the periphery of the retina, and are frequently in groups, point-shaped and close together, but without merging into each other. They frequently follow the course of the vessels, seeming to lie in the vessel walls, and appear rather like stripe-shaped exudates accompanying the vessels to the papillary area. In addition there are extensive blood-exudates in the retinal tissue, represented as large plaques with ray-formed margins. The microscope discovers sclerotic and fatty degeneration of the endothelium of the blood-vessels. In most cases the patient does not know that his eyes are affected, and he is troubled with scotomas only when the macula is the chief location of the blood-spots. More marked are the weakness of accommodation, asthenopia, fatigue of the eyes and periodic slight pareses of intrinsic and extrinsic muscles with diplopia and vertigo. Among miners there are frequently photophobia and hemeralopia. Also there is often a moderate narrowing of the field. The visual disturbances, he thinks, are caused not so much by the retinal changes as by the general symptoms of the disease. (Compare this description with von Nieden's observations abstracted above.)

Fischer[15] notes that the hookworm itself has never been found in the eye. Birmer asserted that retinal hemorrhage was pathognomonic of the anemia named after him, but this is incorrect, since it is well known, as Fischer observes, that retinal hemorrhages occur in all forms of anemia, but especially, he thinks, in ankylostomiasis.

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[6] Calhoun, F. Phinizy: Eye Complications Caused by Hookworm Disease, The Journal A. M. A., Sept. 21, 1912, p. 1075.

[7] Mauldin: Jour. South Carolina Med. Assn., 1910, vi, 521.

[8] Stiles: Osler's Modern Medicine, i, 589.

[9] Stiles: Quoted by Ashford and Igaravidez.

[10] Dock and Bass: Hookworm Disease, St. Louis, 1910.

[11] Rampoldi, M.: Cong. périod. internat. d'ophth., 1880, Milan, 1881, vi, 283.

[12] Von Nieden: Ophth. Klin., Stuttgart, 1903, vii, 181; Centralbl. f. prakt. Augenh., 1903, xxvii, 207.

[13] Nuel and Lenlat: Ann. d'Ocul., 1889, lii, 150.

[14] Nieden, A.: Wiener med. Presse, 1897, xxxviii, 1094.

[15] Fischer: Ber. d. ophthal. Gesellsch., Stuttgart, 1892, xxii, 26; Deutsch. med. Wchnschr., xix, 311.

Lutz[16] remarks that in ankylostoma infection the vessels of the fundus, especially the arteries, are contracted and the papilla is paler than normal. Lutz has also noted, as a rare sign, chemosis of the bulbopalpebral fold.

R. Rampoldi[17] relates a case of bilateral convergent strabismus, coming on suddenly, and accompanied by homonymous diplopia. Treatment for hookworm was administered and the strabismus disappeared.

Ashford and Igaravidez[18] state that in a series of cases of this disease, 69.5 per cent. had more or less serious disturbances of the eyes. (There seems to be an error in the figures, however, and the percentage should have been put at 34.9.) They go on to say:

> We cannot doubt that much of this was due simply to the degree of anemia, but there remains a considerable percentage . . . with more or less marked visual affections with very little anemia.

They quote Loebker and Bruns as remarking on the pallor of the eye-grounds, pulsation of veins, lowered intra-ocular pressure, venous tortuosity and, commonly, retinal hemorrhages. They note that many authors speak of edema of the papilla. They quote Siccardi as observing nystagmus, diplopia, amblyopia, muscular and accommodative asthenopia and restriction of the field. This author admits the possibility of anemia being the cause of most of the eye symptoms, and that functional visual disturbances may be due to reflex irritation from the intestinal tract, but avers that when we have a retinitis coincident with optic atrophy, the question of the presence of a circulating toxin must be considered. Ashford and Igaravidez emphasize the occurrence of "blurred vision" and night-blindness, and mention the fact that corneal ulcers have been reported, they having seen one case of the latter. They report that Lippitt, with a large experience, states that fully three-fourths of his cataract patients in Porto Rico were anemic.[19]

COMPARATIVE CONSIDERATIONS

Here, then, we have an array of symptoms and pathologic conditions, any of which — with the exception of cataract, noted and discussed below — might be fully expected to appear in the ordinary run of cases of anemia. The lesion most frequently noted and dilated on appears to be retinal hemorrhage, and one or two of the authors referred to above seem to think that the appearance of these hemorrhages in the peripheral area of the retina is more or less characteristic. This is assuredly a mistake, for such lesions commonly occur in other forms of anemia. Some idea of the frequency of retinal hemorrhages in anemia may be had from the figures quoted by Weeks,[20] which recite that of 238 American cases of pernicious anemia, 31 per cent. had retinal hemorrhages, and of 326 foreign cases 72 per cent. exhibited this eye-lesion.

In uncinariasis there is a decrease of the hemoglobin content and of the red blood-corpuscles, and a comparative increase in the leukocyte-count. When Weeks wrote his book, which was published in 1910, he had probably never given a thought to hookworm disease as having any influence on the eyes, nor, I believe, was there any reason why he should have, but the following brief extracts from his discussion of leukocythemic retinitis and the retinitis of pernicious anemia (which he remarks are very similar) make an interesting comparison with Nieden's report abstracted above: In the first-mentioned form of retinitis he says, "The fundus of the eye usually appears lighter in color than normal . . . the arteries are pale, often somewhat reduced in caliber . . . the veins are dilated, broad and tortuous . . . the retina often becomes hazy . . . numerous hemorrhages occur near the periphery of the retina . . . many striped or flame-shaped hemorrhages may occur in the vicinity of the disk," and in the retinitis of pernicious anemia he says, "The nerve-fiber layer of the retina is often edematous . . . in places the fibers are pushed apart by hemorrhages . . . the elements of the deeper layers of the retina are also separated by the constituents of the blood that have escaped from the blood-vessels . . . the escaped blood-corpuscles undergo degenerative changes . . . white corpuscles are found in the clots, and, in addition, small hyaline masses are present." Indeed, in this brief description one can almost see before his mind's eye one of Nieden's "characteristic" hookworm cases.

In reference to the blurring of vision and blindness mentioned as accompanying uncinariasis, it is to be noted that Kurtsinger[21] collected 198 cases of more or less complete blindness due to hemorrhage from remote parts of the body, the bleeding having been either sudden and profuse — a single hemorrhage — or slow and continuous (this is the method of extraction by the hookworm). It is interesting to observe that out of 189 of these cases, seventy-two were from hemorrhage from the stomach and intestine, and that three followed the application of leeches.

Some of the authors quoted above maintain that the presence of the eye-lesions which they have noted must be explained on the theory that there is a specific toxin in hookworm disease. But why should a mere theory be mooted to explain something that is already easily comprehensible and that has been demonstrated time and time again to be based on a well-recognized pathologic principle? Furthermore, if the eye-lesions were caused by a toxin, then those having the heaviest infections should produce the most eye symptoms; but this is not at all the case. It is well to remember that the retinal lesions of anemia are due either to a reduction in the amount of circulating blood, or to a change in the quality of the blood. The hookworm accomplishes both ends, whether or not it is the manufacturer and disseminator of a specific toxin, for it extracts blood in volume, and decreases the hemoglobin and red corpuscle contents. The hookworm, then, causes an anemia, by no means necessarily a toxemia, and any form of anemia may cause the eye symptoms we are discussing — a fact which has been recognized certainly ever since Helmholtz gave us the first ophthalmoscope more than sixty years ago.

In addition to the symptoms mentioned, pallor of the disk, exudative retinitis, retinal edema and vascular tortuosities are more or less common fundus changes in anemia, and cannot be considered as indicating any specific causation.

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[16] Lutz: Samml. klin. Vortr., Leipsic, 1880-1886, Inn. Med., No. 88.

[17] Rampoldi, R.: Ann. di Ottal, Pavia, 1888-1889, xvii, 170.

[18] Ashford and Igaravidez: Uncinariasis in Porto Rico, U. S. Senate Document 808, 1911, p. 96.

[19] Two Japanese authors have had something to say on this subject, but I was unable to find a translator. The references are: Inoshita, Chingai Iji Shinpo, Tokio, p. 1160. Onishi, idem., xiv, No. 4, p. 2. Hisaki, Chiba Igahuhwai-Zassh, Tokio, 1900, No. 47, p. 1. For these and some other references I am indebted to Dr. Charles Wardell Stiles.

[20] Weeks: Diseases of the Eye, 1910, p. 766.

[21] Kurtsinger: Quoted by Weeks: Diseases of the Eye, 1910, p. 434.

Dilatation of the pupil is of such common occurrence (a weakening of the iris constrictor) in the various anemias that it is familiar even to the general practitioner; yet many of such cases may be more fancied than real, since there is no fixed physiologic size for the pupil. In the fifty-three cases which I have tabulated I did not once see a really noticeably dilated pupil; but there were very few severe cases in this series. I failed entirely to elicit Stiles' "fish-like-stare" sign, though I made a number of efforts to do so. Ashford and Igaravidez, with their unlimited field of observation, were unable to recognize it.

Imbalance of the ocular muscles and accommodative weakness are not infrequently seen in anemia. It would be curious, indeed, if, in the general myasthenia, the delicate musculature of the eye should escape involvement.

It is hardly fair to accuse the hookworm in cases of hemeralopia and nystagmus. The authors noting these are foreigners, many of whose cases are in miners, who are, of course, as a class, peculiarly subject to these ocular symptoms.

As to nyctalopia, this is a phenomenon known to exist most frequently in tropical and subtropical countries, and it is therefore easy to understand why the principal references to this symptom come from Ashford and Igaravidez in Porto Rico.

F. P. Calhoun[6] believes and Hansell[22] concurs, that the cataracts which he has observed in hookworm patients were caused by a toxin originating from the parasite, and directs attention to the theory that some forms of cataract may be caused by circulating toxins of various sorts — chemical or biologic. It may well be that the hookworm evolves a toxin; Ashford and Igaravidez and others believe so, as I have already remarked, but it has never been demonstrated; and it is certainly strange, if there is such a toxin and it is a cause of cataract, that only five such cases have been reported in our Southern states, where it has been demonstrated that 40 per cent. of the population of the rural districts are the victims of uncinariasis.

Lippitt,[23] with a large experience, states that fully three-fourths of his cataract patients in Porto Rico were anemic. It is well known that cataract occurs more often among the lower classes and the poorly nourished than among persons in better environments. When, therefore, we consider that 80 per cent. of Porto Rico's population is infected with hook-worm,[24] and are consequently in poor hygienic condition, it is certainly not remarkable that three-fourths of all cataract patients in that island are observed to be anemic. Indeed, it is rather more to be wondered at, in the light of these facts, that the percentage of anemic cases in such a series does not go to a much higher figure.

A TABULATED SERIES OF FIFTY-THREE CASES

Other eye-lesions associated with anemia are some forms of choroiditis, vitreous opacities and palpebral folliculosis. Curiously enough, none of these have been mentioned heretofore in connection with hookworm anemia, yet they must have been present in some of the thousands of cases that have been examined. Doubtless, choroiditis has been overlooked in the frequent retinal involvement, though I saw traces of it in two cases (4 per cent.) of my series tabulated herewith (Cases 1 and 9). Vitreous opacities might, of course, be easily overlooked unless especially sought for. In my series I noted four cases (7.5 per cent.) of folliculosis (Cases 5, 40, 42 and 50).

In the fifty-three cases of my series there were thirty-five males and eighteen females. The ages ranged from 9 to 22 years. The diagnosis of hookworm was made microscopically in every case. Only one patient (Case 27) had been treated previously. Homatropin mydriasis was used in every case for retinoscopy and ophthalmoscopy. It was my impression (without actual timing) that the patients on the whole responded to the mydriatic more quickly than normal persons would have. The refractive errors were found to follow closely the well-known average of persons of like age. The two cases of interstitial keratitis noted have been referred to in the foregoing text. There were no marked eye-symptoms voluntarily referred to by a single patient. In twenty-six of these cases (approximately 50 per cent.) I thought I observed a shallowness of the anterior chamber, one of them (Case 37, a severe case) being especially marked. I cannot insist on this observation, however, since I had no means of accurate measurement, so that the report on this point is but a matter of opinion without substantiation, and I do not, myself, attach any great significance to it. The most common fundus changes were pallor and tortuous vessels, the latter occurring in twelve cases (22.6 per cent.). Retinal hemorrhage had occurred in only two cases (Cases 1 and 9), and then in but slight degree.

CONCLUSIONS

1. The answer to the first question in the opening sentences of this paper is that hookworm disease, by virtue of the qualitative and quantitative anemia and the general systemic ill condition for which it is responsible, is, in this indirect way, and in this way only, a causative factor in the various eye-lesions which have been described as accompanying it.

2. To the second question the answer is that none of the eye-lesions occurring in this disease are in any sense sufficiently distinctive or characteristic to be of diagnostic value.

The evidence, collected from various sources, seems complete enough, and in addition if, in a systematic examination of the eyes of fifty-three consecutive and unselected cases, we find nothing to point us to a specific causative factor for the eye-lesions, and nothing in the clinical ocular pathology that could be regarded as a distinctive diagnostic aid in the recognition of the systemic disease, we may safely conclude that, in the light of our present knowledge, the association of eye-symptoms and uncinariasis must be regarded as purely incidental, or at least that the eye-symptoms occur only as the sequelae of general pathologic conditions, the principles of whose existence have long been recognized.

It need hardly be pointed out that the importance of these conclusions lies, of course, in the fact that many cases of anemia, with or without eye manifestations, occur without an accompanying hookworm infection, and also that many cases of uncinariasis, with or without eye complications, are encountered which are lacking the symptom of anemia. The latter condition is seen in many apparently robust and even

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22. Hansell: Discussion on article by Calhoun, Footnote 6.
23. Lippitt: Quoted by Ashford and Igaravidez.
24. Ashford and Igaravidez: Uncinariasis in Porto Rico, 1911, p. 179.

athletic young persons from the rural districts and is especially marked in the negro, who seems more or less immune to the hookworm syndrome, though Burdell[25] has shown that in certain localities in our South 65 per cent. of all negroes are infected with the parasite, and, while acting as intermediary hosts and active carriers of the disease, present no clinical symptoms whatever.

Obviously, it is well to know, when we see the signs of anemia in the eye-grounds, or in the facies for that matter, that we might properly suspect the hookworm of being a possible cause of the anemia; but beyond this our studies of the coincidental eye-lesions in uncinariasis have not yet carried us.

ABSTRACT OF DISCUSSION

Dr. Charles W. Kollock, Charleston, S. C.: Dr. Jervey asks: 1. Is the hookworm infection a causative factor in the existing eye-lesion? 2. If it is a causative factor, is the presenting eye-lesion sufficiently distinctive or characteristic to be of diagnostic aid in clinical recognition of uncinariasis?

EYE-SYMPTOMS IN FIFTY-THREE HOOKWORM PATIENTS*

Case No.	Severity of Infection	General Condition	Vision Without Correction		Conjunctiva	Cornea	Anterior Chamber	Retinoscope Refractive Error	Ophthalmoscopic Findings	Remarks
			P.	L.						
1	Light	Fair	15/15	15/15	Normal	Normal	Normal	Comp.hy.astig.	Tortuous vessels. Tiny old hemorrhage and pigment left.	
2	Light	Fair	15/20	15/20	Normal	Normal	Normal	Hy. astig.	Normal	
3	Light	Fair	15/20	15/20	Normal	Normal	Normal	Comp.hy.astig.	Normal	
4	Light	Fair	15/15	15/15	Normal	Normal	Normal	Hy.	Normal	
5	Light	Fair	15/20	15/20	Folliculosis	Normal	Normal	Comp.hy.astig.	Normal	
6	Light	Fair	15/15	15/15	Blepharitis	Normal	Shallow	Hy.	Slight retinal congestion	
7	Light	Fair	15/20	15/20	Normal	Normal	Normal	Comp.hy.astig.	Pale retinas, large veins	
8	Medium	Poor	15/15	15/15	Pale	Normal	Normal	Emmet.	Pale disks, tortuous vessels	
9	Medium	Poor	15/30	15/30	Normal	Normal	Normal	Mixed Astig.	Red disks, tiny hem. and pigment left	Epicanthus
10	Light	Fair	15/15	15/15	Normal	Normal	Normal	Emmet.	Retinas congested, disks indistinct	
11	Light	Fair	Illiterate		Normal	Normal	Shallow	Hy.	Normal	
12	Light	Fair	15/15	15/40	Normal	Normal	Shallow	Hy.	Venous congestion, tortuosities	
13	Light	Fair	15/30	15/30	Normal	Normal	Shallow	Hy.	Pale fundi	
14	Light	Fair	15/20	15/20	Normal	Normal	Shallow	Hy.	Normal	
15	Light	Fair	15/15	15/15	Normal	Normal	Shallow	Hy.	Normal	
16	Light	Fair	15/30	15/30	Normal	Normal	Shallow	Hy.	Normal	
17	Light	Fair	15/15	15/15	Normal	Normal	Normal	Emmet.	Central veins full	
18	Light	Fair	15/15	15/15	Normal	Normal	Normal	Hy.	Veins full and tortuous, disks obscure	
19	Light	Fair	15/30	15/40	Normal	Normal	Shallow	Hy.	Normal	
20	Light	Fair	15/20	15/20	Normal	Normal	Shallow	Hy.	Normal	Epicanthus
21	Light	Fair	15/15	15/15	Normal	Normal	Shallow	Comp.hy.astig.	Tortuous vessels	
22	Light	Fair	15/20	15/20	Normal	Normal	Normal	Comp. My. astig.	Deeply pigmented fundi, tortuous vessels	
23	Light	Fair	Illiterate		Normal	Normal	Normal	Hy.	Normal	
24	Medium	Fair	15/15	15/15	Normal	Normal	Shallow	Hy.	Normal	
25	Medium	Fair	15/15	15/15	Normal	Normal	Shallow	Emmet.	Normal	
26	Medium	Fair	7/70	6/70	Normal	Normal	Normal	Hy.	Deeply pigmented fundus, tortuous vessels	Alternating internal strabismus
27	Severe	Fair	15/15	15/15	Normal	Normal	Shallow	Emmet.	Retinal congestion, disks indistinct, tortuous vessels	Thymol treatment 4 weeks ago. Numerous ova now in feces.
28	Severe	Fair	15/15	15/15	Normal	Normal	Shallow	Emmet.	Right fundus normal, left congested	
29	Light	Fair	Illiterate		Normal	Normal	Normal	Emmet.	Pale fundi	
30	Light	Good	15/15	15/15	Normal	Normal	Shallow	Comp.hy.astig.	Pale disks	
31	Light	Good	15/20	15/20	Normal	Normal	Shallow	Hy.	Normal	
32	Light	Fair	15/20	15/15	Normal	Normal	Shallow	My.	Vessels full and tortuous	
33	Light	Fair	15/15	15/15	Normal	Normal	Normal	Hy.	Normal	
34	Light	Fair	15/20	15/20	Normal	Normal	Normal	Hy.	Pale fundi	
35	Light	Fair	15/20	15/20	Normal	Normal	Normal	Hy. Astig.	Vessels full and tortuous	
36	Light	Fair	15/15	15/15	Normal	Normal	Shallow	....	....	
37	Severe	Poor	15/15	15/15	Normal	Normal	Very shallow	Hy.	Pale fundi	
38	Medium	Poor	15/20	15/20	Normal	Normal	Shallow	Emmet.	Pale disks	
39	Medium	Poor	15/20	15/30	Normal	Normal	Shallow	Hy.	Fundi pale, disks hazy	
40	Medium	Poor	15/15	15/15	Folliculosis	Normal	Normal	Hy.	Pale fundi	
41	Light	Good	15/15	15/15	Normal	Normal	Normal	Hy.	Disks pale, vessels tortuous	
42	Light	Good	15/15	15/15	Folliculosis	Normal	Normal	Hy.	Normal	
43	Light	Fair	15/15	15/15	Normal	Normal	Normal	My.	Normal	
44	Light	Fair	15/70	15/70	Chr. congest'n	Normal	Normal	Comp.hy.astig.	Normal	
45	Light	Fair	15/70	15/70	Chr. congest'n	Normal	Normal	Mixed astig.	Normal	
46	Severe	Poor	15/15	15/15	Normal	Normal	Shallow	Emmet.	Fundi pale, vessels tortuous	
47	Light	Good	15/15	15/15	Normal	Normal	Normal	Hy.	Normal	
48	Light	Poor	15/15	15/15	Normal	Normal	Shallow	Hy. astig.	Normal	
49	Light	Fair	15/15	15/15	Normal	Normal	Shallow	Hy.	Normal	
50	Light	Good	15/30	15/20	Folliculosis	Normal	Shallow	Hy.	Normal	
51	Light	Fair	15/15	15/15	Normal	Smoky	Shallow	Hy. astig.	Normal	
52	Severe	Very poor	....	.....	Congested	Normal	Normal	....	....	Interstitial keratitis. Died tuberculosis one year later.
53	Severe	Very poor	....	.....	Congested	Smoky	Normal	....	....	Interstitial keratitis. Died tuberculosis one year later.

* In all the patients the pupils were normal in size and reaction, and the lenses were normal.

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25. Burdell: Jour. South Carolina Med. Assn., 1910, vi, 326.

A careful study of the report of his cases leads me to conclude that in no instance is there a lesion or condition which could be ascribed to any particular cause. The only condition which he mentions as being more conspicuous than others occurred in twenty-six of the fifty-three cases reported and was an apparent shallowness of the anterior chamber. This was marked in one, a very severe case, while the general condition of the others in which it was noted was fair. He does not mention an increase of tension; in fact the opposite condition would be more likely observed in this class of cases, as a condition of the vessels and blood which permits the latter to pass through the walls of the former might also exist in and about the cornea and cause increased exosmosis and a temporary shallowness of the anterior chamber. This is, perhaps, theorizing too much, but there is no reason to deem it characteristic of anything more than a weakened general condition.

Calhoun, Hansell, Ashford and Igaravidez suggest that a toxin may originate from the hookworm and be a cause of cataract as other toxins have been supposed to be. Dr. Jervey well says that in the South, where 40 per cent. of the population have the disease, it is strange that only five cases of cataract have been reported. In the number of cases reported he is mistaken, though it will not alter his deductions. I have reported two cases of cataract in children having hookworm and have seen two others who were undoubtedly infected, though at the time nothing was known of the worm. These two had every appearance of the disease and came from a neighborhood where such cases were and still are very numerous. These children were from 8 to 12 years of age and on two I operated successfully for the removal of the cataracts. All were white. The negro is said to be immune to the effects of the worm and it is undoubtedly true that cataract is less frequently seen in the negro than the white child, even the zonular variety which is probably due to congenital causes. I have sometimes thought that the corneal affections, so common in the negro, might be indirectly due to the hookworm, but of this there is no proof and a more likely cause is syphilis. Night-blindness is much more frequent among negroes than whites, especially among children, sometimes in those who appear in fair condition and often among those who suffer from xerosis. Xerosis and night-blindness, which often go hand in hand, are very rare in white children in my part of the country, while uncinariasis is of every-day occurrence. It would be strange, if night-blindness is caused by the worm, that it should occur so frequently in the negro, who is immune, and so seldom in the white child, who offers a fertile soil. The numerous conditions which have been mentioned by writers, such as retinal hemorrhages, pallor and edema of the retina, haziness of the optic disk and weakened accommodation, are all such common associates and followers of the various anemias that it would take a wide stretch of the imagination to class them as pathognomonic of the disease until much more is known about it than now.

My own experience and a digest of the views of others cause me, therefore, to accept the conclusions of Dr. Jervey as correct until, at least, further investigations shall prove to the contrary.

Dr. F. Phinizy Calhoun, Atlanta, Ga.: My remarks are not a criticism of Dr. Jervey's paper, but a defense of my views presented before this Section in 1911. That ocular changes do occur, no one can deny, and Dr. Jervey's report of fifty-three cases shows a fairly large percentage of eye complications, namely, two cases of retinal hemorrhage and twelve cases in which the retinal veins were congested or tortuous—evidences of circulatory changes. I believe that Dr. Jervey and I agree that eye complications do occur in hookworm disease, and the only real point of difference is whether an anemia or a toxemia is the exciting cause.

Dr. Jervey's views, expressed in the answer to his first question, brings up an old subject in the discussion of hookworm disease, namely, the existence of a toxemia and the cause of the anemia. It was early assumed that the worms attaching themselves to the alimentary wall would lead to hemorrhages and the resulting loss of blood would cause the characteristic anemia. Necropsies have shown only a severe, profuse catarrh of the small intestines and often spots of hemorrhagic infiltration with the worms hanging to it. It does not follow that the worms suck the blood; in fact, Loos insists that their natural food is intestinal epithelium, and although blood is found in the intestines of the worms, the red corpuscles are not digested. These findings led to the belief that hookworm anemia was one of toxemia and not secondary to the loss of blood, and two main theories have been propounded: that the worm directly secretes a toxin, or that this toxin is produced by some extraneous organism, as intestinal bacteria. Numerous attempts have been made to isolate a hemolytic substance, with varying success. As to which theory is correct I do not venture an opinion, but I rely solely on my clinical observations and the words of students of this disease, that a toxin does exist. I, however, have seen cases of great anemia in hookworm disease in which a few worms were found; this is substantiated in one case of hookworm cataract with anemia and few worms. The fact that no specific toxin has yet been positively demonstrated should not lessen our belief that it does exist. Within a few days after the administration of the treatment for the elimination of the worms, the patient's symptoms of malaise and general lassitude disappear, yet it is weeks or months before the corpuscular and hemoglobin elements in the blood approach a normal. Again, chlorosis more nearly than any other chronic ailment approaches hookworm disease in its anemia. In the former, there is the usual development of the genitalia, pubic hair and even a beard, whereas in the latter, all are markedly undeveloped.

We find certain extra-ocular and asthenopic changes associated with disease, many of them present in other serious chronic ailments due to a "systemic ill condition," as Dr. Jervey aptly puts it, but for the more serious intra-ocular findings, such as changes in the retina, choroid and even the lens, I do believe that hookworm disease *per se* is the cause, and not in an indirect way through the anemia, just as circulatory changes of the retina occur in chronic nephritis, diabetes, the cancerous cachexia and even pellagra, analogous diseases in which eye changes, even cataract, have been recorded. Whether we believe in the toxin theory of hookworm disease, or the existence solely of an anemia, lenticular changes in young people can be explained, on account of the anatomic relation of the lens to the ciliary body, iris and humors of the eye which supply its nourishment. Given a hookworm subject who states positively that at one time he saw distinctly and many months after the initial lesion (ground-itch) his sight began to fail, and when extracting a milky-white, soft cataract, there were seen retinal disturbances, such as tortuous vessels and small hemorrhages, which disappeared after the elimination of the worms and health restored, is it not reasonable to suppose that the hookworm was responsible for these changes? Such has been my experience with a case not profoundly anemic.

By no means does it follow that if the eye lesions were caused from a toxin then those patients having the heaviest infection of hookworm should produce the most eye symptoms. I am not sure that the severest cases of anemia, diabetes or nephritis show the most eye changes. I have seen, in a few hookworm patients, eye lesions such as tortuous veins, choroidal changes and spontaneous hemorrhages from the conjunctiva without a profound anemia and the number of worms expelled were in fair quantity.

The existence of any characteristic eye lesion associated with or caused by hookworm disease I myself seriously doubt, but the fact that reports have been made should serve to stimulate certain ophthalmologists and field workers in the disease to the further investigation of the subject and to report their findings. Only from hundreds of such reports can we accurately draw conclusions.

Dr. J. W. Jervey, Greenville, S. C.: I think Dr. Calhoun feels that I have in some way argued against the existence of a toxin in hookworm disease. By no means do I take that stand. There may readily be a toxin. Perhaps there is. I don't know. I know it has never been demonstrated, and that statement was my only reference to toxin. With regard to the other matters, I think the argument is presented in full in the paper.

THE TREATMENT OF ALBUMINURIA IN PREGNANCY *

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A perusal of the literature on albuminuria of pregnancy, during the past forty years, shows that our profession was constantly on the alert to grasp anything new that would offer a chance for improvement. The interest in the treatment never flagged and at the present time we are divided into two great forces, one for active interference and the other for an expectant plan coupled with sedative and eliminative medications.

It is interesting to notice how many are constantly leaving one camp to enter the other.

During 1875 and 1876 I was a student at the obstetric department in the Vienna General Hospital, and carried away wth me the experience and teaching of Carl Braun, Bandle, Spaeth and others. The treatment was eminently conservative. Many deaths of mother and child, as I look at it to-day, have been the result. A less conservative treatment usually killed the child and many mothers were made invalids for the rest of their days by forcible delivery, unless they died of such efforts. I learned to dread this difficulty as I did no other. Every case soon became a study by itself. Every method of treatment had its pitfalls. No method of treatment sufficed for all cases. It became necessary to classify the cases as they came to me. I propose therefore to give the result of such treatment as has been my custom at the bedside.

Fads and fancies have never been indulged in. Such fanciful treatment as extirpation of both breasts found no favor with me. As long as our knowledge of the causation is so meager our treatment must remain empirical and the personal equation of the attendant will be a factor in the result.

While laboratory methods of diagnosis are all-important and must not be lost sight of, the clinical picture and bedside symptoms must ever be our guide for action.

The albuminuric patients who come to us early in their pregnancy and are discovered early are those whose cases rarely give us much trouble. On the other hand, the explosive cases are much to be feared. The former readily respond to diet, hot packs and purgations, especially when the subjective symptoms are mild, the percentage of urea normal, or nearly so, the quantity of albumin little, the skin active and blood-pressure not excessive.

The latter needs heroic measures. During many years of active clinical obstetric practice, I have gradually formulated for myself a classification of the cases as to their severity and treatment. In doing so, one can well separate the cases occurring in the primipara from those of the multipara for reasons to spoken of later.

In discussing albuminuria of the primipara, there are three cardinal conditions which we must consider: (1) the character of albuminuria, (2) the presence or absence of uremic symptoms, and (3) the time to which pregnancy has advanced. From these conditions it has been my custom to consider each case as coming under the following subdivision in regard to treatment. It has been my special effort at all times to do the best I can for the child. It has certain rights which should be respected.

1. A primipara who presents albuminuria of slight or moderate degree with few or no kidney elements and no uremic symptoms at a time before the viability of the child should have close observation, and a salt-free and restricted diet, with an occasional calomel purge. This is all that is necessary and will usually carry the case along nicely.

2. In a primipara before the viability of the child with much albuminuria and many kidney elements, reduced quantity of urea and urine but still no uremic symptoms, we are confronted with a more severe problem, for uremic symptoms with high blood-pressure may supervene at any time. I consider albuminuria of this type before the seventh month in the primipara a very serious condition. At six months and before, I have seen it but once.

Again, calomel purges, with a more restricted diet of milk and green vegetables, rest in bed, and close and constant observation is my refuge for fear the patient may lapse into the next condition.

3. We now come to the condition in which, the child being now viable, there is an increasing and severe albuminuria and many uremic symptoms, as shown by partial blindness, headache, convulsions or even coma. Fortunately the condition at this time is rare, but then also very dangerous.

If convulsions have not set in, and absolute rest, calomel, lavage of stomach and rectum, morphin-chloral, an absolute milk diet and veratrum viride have had no effect in staying the severe symptoms, we should induce labor. In these cases venesection should not be lost sight of. Time is an important element, and if we have missed our chance at an early induction of labor, convulsions and coma may supervene and we shall be driven to a vaginal or cesarean section.

The time has now come when we must empty the uterus and do it with as little injury to the mother as possible.

4. When during the viability of the child there has been a gradual, though increasing, severity of the symptoms, we should still make efforts to stave off the evil hour by such appropriate treatment as has already been spoken of. If, however, the reverse is the case, that is, the albuminuria and uremic symptoms have come on suddenly and with great severity, early delivery by induced labor should be our choice, provided there is sufficient time.

When convulsions have supervened or there is great edema of the retina and headache, the classical cesarean section has been my choice. I have not seen much of the vaginal cesarean section in these cases and it has seemed to me that this is rapidly losing ground with the profession.

5. Until now I have spoken of those cases that have been under careful and constant observation and I now wish to consider the patient as brought to us in convulsions, any time during the last two or three months of gestation and without any symptoms of labor.

If there are lucid intermissions and the patient talks and acts sensibly, I again make efforts to carry her along by the use of calomel and enemas; but if there is much edema by the starvation treatment, veratrum viride or morphin, etc.

When, however, there are no lucid intervals and coma is deep and lasting in spite of blood-letting, it

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* Read before the Section on Obstetrics, Gynecology and Abdominal Surgery at the Sixty-Fifth Annual Session of the American Medical Association, Atlantic City, N. J., June, 1914.

has been my rule to proceed to a cesarean section, because I think that it offers the mother and child the best chances for life and is the least mutilating of all procedures for the former.

A forcible delivery by the vagina subjects her to no end of severe and incurable injuries and usually kills the child. Neither do I think well, therefore, of rapid dilatation, accouchement forcé, or even a turning with the cervix long, narrow and unyielding. Forcible dilatation, no matter how accomplished, with us means injury to the cervix, broad ligament, vagina and to the pelvic floor, and is commonly irreparable.

6. Lastly we arrive at that more fortunate condition when the patient in labor is brought to us in convulsions or even coma with a free dilatation or even a retraction of the cervix. Chloral hydrate, morphin, venesection or veratrum viride followed by the forceps give both mother and child a good chance.

I have had no experience with pituitary extract in these cases. When, however, such a primipara comes to me in convulsions without any dilatation, and not in labor, I have (with much hesitancy at first), since 1900, done cesarean section. My hesitation has lost us many children, about 60 per cent. In the latter half of my experience I have lost but 30 per cent.

Gradually I have had increased confidence, and all expectant treatment in these cases has been abandoned for that method of delivery.

In our treatment of all these cases we must not forget the dangers of chloral, morphin or veratrum viride. The latter is an especially dangerous drug and needs careful supervision.

The greater danger is with the primipara. The multipara rarely presents such violent and dangerous symptoms, but 8 per cent. of my severe fulminating cases were multiparas, and all mothers and children were saved. Albuminuria usually occurs late in the pregnancy, and convulsions and labor often seem concomitant. Those cases which show albuminuria coming on gradually are more easily managed, and I have never seen any untoward results.

During the last fourteen years we[1] have gradually abandoned all temporizing treatment in the cases of severe convulsions and have done the classical cesarean section, and record the death of 10 per cent. of mothers in forty cases, while we lost 45 per cent. of all the children.

Some of these children lived for from six hours to twelve days, but were recorded as lost because they were still in the hospital. During the time that we temporized, say the first twenty cases, we lost 60 per cent. of the children while the mothers' death-rate was 10 per cent.

If we had refused operations in the cases that have been subjected to vaginal interference, the death-rate of the mothers would have been but 5 per cent. None of these patients were in labor; they were all antepartum cases. When we look back to the days of forcible dilatations and delivery, and remember all the invalid mothers we are glad to record the freedom from the pelvic injuries. Many patients report repeated pregnancies following our work, one as many as seven, with perfect freedom from accidents.

By the kindness of Dr. Bunting of Elizabeth, N. J., I have his report of twenty-nine cases of convulsions carefully tabulated and skilfully treated after the manner of the Rotunda Hospital. He records 17.2 per cent. of deaths of the mothers, and 37.9 per cent. of deaths of the child. Of the latter, 14 per cent. were thought not to have been viable. All the mothers were brought in with convulsions and about 10 per cent. were multiparas with no loss of the mothers and one dead child, one child alive and one child not yet born, the mother having recovered from the illness; 79.3 per cent. of the cases were delivered naturally and about 7 per cent. were forceps cases and a similar number of cases had induced labor.

I am glad to have these figures, as they represent an excellent result of the expectative plan of treatment as practiced by the Rotunda Hospital, of which morphin, repeated as convulsions return, lavage of the stomach and colon, castor oil and croton oil, absolute quietness and starvation are the main features.

This treatment is worthy of our consideration and offers the non-operating obstetricians a good field for observation and satisfactory results. To compare results in various hands I have looked over a few statistics published in 1912. I find that Helsingfors has a mortality of 30.8 per cent. for mothers in the cases of forcible delivery. Nothing is said of the miserable condition of the mothers who have recovered in after-life. Voight of Berlin reports 43.7 per cent. deaths of the mothers delivered by the Stroganoff method and 37.5 per cent. of the children.

The Geneva clinic represents a death-rate from conservative therapy of 52.2 per cent. for the mothers and 61 per cent. for the children. In rapid delivery the mothers' death-rate is 10 per cent. and the child's 12.5 per cent.

Bellingham-Smith reports a death-rate of the mother after conservative treatment of 16 per cent.

Dührssen has 15 per cent. of deaths following active treatment. Our results for the mother and child compare well with these and we shall continue until convinced of something better.

1002 Broad Street.

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[1] The cases reported are those of Dr. Charles L. Ill and myself and our assistants.

TREATMENT OF THE TOXEMIAS OF PREGNANCY *

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In recent years our conception of the toxemias associated with pregnancy has assumed an entirely new aspect. We are now beginning to realize that all the symptoms incident to gestation are secondary to some substances circulating in the maternal blood-stream, which have their origin in the products of conception; that is, from the fetus or placenta, or perhaps from the rapidly growing uterus. The severity of the symptoms depends on the quantity of these substances thrown into circulation, and also on the ability of the mother to react to these substances.

Heretofore all our investigations were directed to the changes found in the kidney, liver and even the brain, and the symptom-complex was attributed to the alteration of function in these organs. The pathologic changes found in the various organs, in patients who succumbed to one of the toxemias of pregnancy, are at present considered secondary to the effects produced by the foreign substances circulating in the maternal blood-stream.

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* Read before the Section on Obstetrics, Gynecology and Abdominal Surgery at the Sixty-Fifth Annual Session of the American Medical Association, Atlantic City, N. J., June, 1914.

The nature and exact origin of these substances is as yet not definitely known. The preponderance of clinical investigation, however, points to the fact that these symptoms of intoxication are due to a protein substance found in the blood-stream of the pregnant woman and never present in the non-pregnant state.

CAUSATION OF TOXEMIAS OF PREGNANCY

The studies and observations of Abderhalden prove conclusively that there is a definite reaction in the serum taken from the pregnant woman and that the blood undergoes great changes. The recent studies of Rubsamen and Schwartz and others prove that the serum taken from cases of the various forms of toxemias has a markedly deficient, or an entire absence of, cleaving power. Investigations as to the cause of the onset of labor, recently published by von der Heide, Weltz and myself, I believe, furnish additional proof that the various conditions associated with the toxemias of pregnancy have their origin in the maternal circulation. Heide considers his results in reference to the onset of labor as an anaphylactic reaction. He thinks that normally the birth act is brought about by the slow transmission of fetal substances into the blood of the mother which gives rise to the formation of antibodies — "labor substances," as he terms them. Toward the end of gestation these substances are transmitted to the blood of the mother in excessive amounts. That there is a deluge of these substances is proved by the contractions which arise in the last weeks of pregnancy and also by the uniform results obtained by the injection of fetal serum in inertia.

The whole range of the toxemias of pregnancy, and especially eclampsia, should be viewed from the point of view of the maternal circulation overcharged with foreign protein substances. In eclampsia, we have many clinical manifestations pointing to this. The sudden onset of symptoms and their sudden disappearance, the sudden changes found in the urine and their sudden disappearance, the more frequent occurrence of toxemias in primiparas and the fact that eclampsia is more frequent in twin pregnancies tend to prove that these manifestations have their origin in the fetus and placenta.

Wolff-Eisner has proved positively that during pregnancy foreign protein substances are continually thrown into the circulation of the mother and that these substances under certain conditions bring about a state of eclampsia. He contends that eclampsia must be considered as the rarest and most severe form of those symptoms dependent on the absorption of foreign albuminoids. The single manifestation of the absorption of foreign substances during pregnancy stands in the same relation clinically as the varied reactions due to the absorption of the pollen protein, harmless conjunctivitis on the one hand, and severe asthmatic attacks on the other, both caused by the absorption of the same pollen protein.

I believe that the references cited above and the observations of many others will ultimately establish the fact that the toxemias of pregnancy are invariably due to a disturbed metabolism, or to be more exact, a loss of metabolic equilibrium in the mother, produced by some foreign substance originating in the fetus or placenta. Normally, these foreign substances are neutralized by the formation of antibodies and therefore no harmful effects result in the greatest number of cases. If, however, the mother is unable to produce a sufficient amount of antibodies or, on the other hand, if the production of foreign substances is disproportionately great, the equilibrium of the maternal metabolism is disturbed, resulting in one of the forms of toxemia.

TREATMENT

Having formulated a probable underlying etiologic factor for the toxemias of pregnancy, we shall now turn our attention to their treatment. Clinically, we recognize two definite varieties of intoxications: (*a*) those occurring in the early months of pregnancy characterized by nausea, morning-sickness, which in a good number of cases if not properly attended to terminates in the severe intoxication commonly known as the pernicious vomiting of pregnancy, and (*b*) those occurring in the last three months of pregnancy, characterized by headache, dimness of vision, slight epigastric pain, an appreciable rise in the blood-pressure and appearance of albumin in the urine. Practically all these cases, unless promptly attended to, terminate in eclampsia, with all its accompanying pathologic complications.

Our success in the treatment of these conditions must depend primarily on the ability to recognize the premonitory signs and symptoms which are always present as a danger-signal. We have succeeded in educating the profession at large to the fact that there is a definite preeclamptic stage, and therefore in carefully observed cases, eclampsia is usually prevented. Unfortunately the same cannot be said to be true of toxemias occurring in the early months. This is so, for in the majority of cases we do not give serious thought or consideration to the patient until symptoms of pernicious vomiting have set in, and it is then often too late for treatment. We must now come to realize that as there is a definite preeclamptic state, so is there also a premonitory stage to pernicious vomiting, which should be easily recognized. Given a case of persistent vomiting and retching, bearing no relation to the intake of food, with an appreciable increase in the pulse-rate, and beginning signs of emaciation, the case, if not attended to and allowed to continue, will terminate fatally.

In the light of experience, I dare say that prophylaxis is the key-note to the successful treatment of all forms of the toxemias of pregnancy, and that no case which is carefully observed should be permitted to reach a stage of pernicious vomiting or eclampsia. Our attitude in these cases must be, and unalterably so, that if the patient does not promptly respond to treatment, pregnancy must be quickly terminated. No one, no matter what his experience may be, can undertake to foretell how rapidly the patient's condition may reach a point which will defy any and all of our known therapeutic measures. Our duty, therefore, is to conserve the life of the mother primarily, and no treatment is justifiable which tends to save the child at the expense of the mother.

Experience has taught us that toxemias of pregnancy usually do not recur. On the contrary, we have come to believe that once a patient has passed through one of the forms of intoxication associated with pregnancy, she has probably become immunized against future recurrences. Formerly pregnancy was forbidden to a patient who had had eclampsia, while now we do not consider it an obstacle to future pregnancies

In the course of my investigations with fetal serum to cause the onset of labor my attention was first directed to the possibility that the toxemias are caused by some foreign protein substances circulating in the maternal stream which have their origin in the product of conception. Case 19 of that series was that of a woman who was admitted to the hospital with severe symptoms of threatening eclampsia. She had severe headache, disturbance of vision, slight edema of the lower extremities with a history of having passed very little urine during the past twenty-four hours. Examination of urine showed it to be full of albumin and casts. In view of the clinical findings, induction of labor was decided on. The patient was a relative of one of the nurses on the hospital staff. The various methods of induction of labor, including the use of fetal serum, were suggested. She was asked if she had any objection to the use of the serum. Her answer was "to use my own discretion in the case."

I decided to bring on labor by the use of the serum, and not only did it cause the onset of labor, but also the urinary symptoms cleared up after the first injection, all toxic symptoms improving before labor actually set in. Realizing the possible therapeutic value of lacental serum in late toxemia of pregnancy, I decided to make use of it in early toxemia, that of pernicious vomiting.

How does the serum act? If it is true that foreign substances which are of toxic nature are constantly thrown into the circulation of the pregnant woman, we are naturally justified in assuming that all women who pass through pregnancy and labor normally must of necessity produce certain neutralizing elements which counteract these toxic substances. Therefore the injection of serum from a normal healthy pregnant woman into one who for some reason is unable to produce these antibodies will not only actually add these neutralizing substances, but also stimulate the circulation toward an increased formation of them.

In order thoroughly to study and arrive at a definite conclusion of the effects produced by the injection of serum in the various toxemias of pregnancy, it is necessary to begin treatment early, before the maternal system is saturated with these toxic substances. In early cases the therapeutic effect of serum should be almost spontaneous. Unfortunately we have not the opportunity of seeing the patient until the condition is far advanced, all remedial measures having already been tried without avail. The patient is then brought to the hospital usually emaciated, with high pulse-rate and all the signs and symptoms of exhaustion. In the latter period of pregnancy, the patient has either had convulsions or is threatened with one. At this stage no amount of serum can possibly be of any value, for not only will the quantity required to counteract this advanced intoxicated condition be too great, but the time lost by this treatment added to the uncertainty of the outcome compels us to resort to a safer method, namely, the prompt interruption of pregnancy.

The advantage of the serum treatment is that if improvement is to take place, it is usually noticed very early, and if after a trial of from thirty-six to forty-eight hours the patient fails to show signs of improvement, it should be discontinued. My experience with the use of placental serum consists of four cases of pernicious vomiting and three cases of threatened eclampsia.

Case 1.—History No. 3808. Mrs. J. G., aged 28; primipara, Russian, wife of dentist, patient of Dr. P. Hurowitz, menstruated last, Sept. 10, 1912. She gives history of persistent vomiting for the past five weeks; was confined to bed the last four weeks. She lost a good deal of weight, and seemed exhausted. Interruption of pregnancy was advised by attending physician. I saw her at her home with Dr. Hurowitz, November 21. We decided to remove her to the hospital and try the injection of fetal serum, and if no signs of improvement were noticed within from thirty-six to forty-eight hours, to induce an abortion.

She was admitted to the Jewish Maternity Hospital the same day. Urine showed slight traces of albumin; urea normal; specific gravity, 1.012; some granular casts. Blood-pressure was 95. Ten c.c. of placental serum was injected intramuscularly at 5:50 p. m. Patient continued to vomit. At 8 p. m., 10 c.c. of placental serum was again injected. Patient felt somewhat nauseated but did not vomit. She slept from 12:30 to 5:50 a. m. and did not vomit during the night.

November 22, 10 a. m., 10 c.c. of placental serum were injected into the right thigh. Patient did not vomit during the day but felt highly nauseated; passed 35 ounces of urine during the twenty-four hours.

November 23, patient did not vomit but complained of pain in the back and abdomen and of a slight headache.

November 24 and 25, patient felt very much improved.

November 26, general diet was given. She continued to improve and was discharged from the hospital November 28.

Patient remained well until December 7, when she again commenced to vomit. I was not notified until December 10, when I saw her again. She appeared quite exhausted. She was readmitted to the hospital on the same day. At 4 p. m. 10 c.c. of placental serum was injected and a second injection of 10 c.c. was given at 8 p. m. Patient did not vomit until 11 p. m.

December 11, 2 p. m., 15 c.c. were injected. Blood-pressure 110. Patient felt very much nauseated but did not vomit. At 8 p. m. she began to vomit quite severely. Ten c.c. were again injected.

December 12, 1 a. m., patient vomited fluid tinged with blood, but did not vomit any more during the night.

December 13, patient vomited once, but felt nauseated the entire day. December 14, patient complained of pain in the abdomen; vomited once at 9 p. m. and felt nauseated.

December 15, 10 c.c. of serum again injected. Patient did not vomit. General condition better. December 16, patient vomited twice, felt weak. December 17, she vomited a few times but did not seem to be affected by it; felt much better.

December 18, patient vomited a few times and felt nauseated. At this stage of her illness her general condition was very much better. While she still vomited a few times she retained a good deal of food. I commenced to give her 2 drams of the placental serum by mouth, every two hours. Patient still vomited occasionally until December 22, when her vomiting ceased.

She remained in the hospital until December 31, and was discharged in good condition.

Case 2.—History No. 3946. S. B., aged 20, primpara, pregnant eight weeks, was confined at Mount Vernon Hospital in charge of Dr. Goodwin. General condition was very poor. It was doubtful if she could withstand interruption of pregnancy. Her pulse remained between 140 and 150. I suggested to Dr. Goodwin to try placental serum as there was not much to lose. Patient was transferred to the Jewish Maternity Hospital the same morning, Dec. 30, 1912. At 3 p. m. 12 c.c. of placental serum were injected intramuscularly. Patient still continued to vomit. Two drams of serum every two hours were given by mouth.

December 31, patient continued to vomit, but general condition was better, conjunctivae less jaundiced.

January 1, pulse dropped to 108 and patient was vomiting less; she retained a certain amount of a koumiss preparation.

January 2, general condition was much better; pulse between 108 and 116; patient complained of some headache.

January 3, patient was put on general diet and during the following ten days of her stay in the hospital she gradually improved, vomiting only occasionally. She was discharged, January 13, in good condition.

CASE 3.—History No. 4023. A. G., patient of Dr. Ralph Waldo, admitted to Lebanon Hospital, Feb. 24, 1913. Tertipara. Three weeks prior to her admission she began to vomit and at the same time to lose weight. Urinary examination showed traces of albumin, 7½ grains of urea to the ounce and a few hyaline and granular casts. Notwithstanding all treatment, patient continued to vomit. March 7, at the suggestion of the pathologist, Dr. E. Bernstein, 15 c.c. of placental serum were injected intramuscularly. Patient vomited half an ounce of greenish fluid. An hour later she began to retain some broth and soup. March 9, 10 c.c. of serum were again injected. Patient was taking more nourishment. March 11, patient developed erysipelas of the right ear and face. March 13, patient died while expelling the fetus.

CASE 4.—Patient of Dr. Dorsey M. Lewis of Middletown, Del., aged 38, sextipara, menstruated last Oct. 6, 1911; admitted to the Jewish Maternity Hospital, May 12, 1912, with the following history: Three weeks prior to her admission, patient commenced to have severe headaches and general weakness; felt nauseated and vomited two or three times a day. At the same time she noticed that her sight was failing. On admission patient gave all the classical symptoms of an impending eclampsia. Induction of labor was decided on and at the same time 10 c.c. of placental serum was given intramuscularly.

May 13, patient had a comfortable night, headache slightly better. Blood-pressure fell from 238 to 180.

May 14, catheter was removed as it failed to produce uterine contractions. Patient was again injected with 26 c.c. of placental serum. Her general condition was much better; passed a greater quantity of urine and eyesight improved. Blood-pressure 165.

May 15, general condition good; patient felt comfortable. Blood-pressure 190. Five c.c. of serum again injected.

May 16, patient much brighter, was able to write address on an envelope. Five c.c. of serum given.

May 17, patient began to complain of slight abdominal pain. At 9 p. m. active labor pains set in and patient was delivered at 11 p. m., child weighing 4 pounds 11 ounces, and alive. Patient gradually improved and was discharged May 29. In this patient I am not certain what caused labor to set in as the catheter was removed three days prior to the onset of labor. It is questionable whether the continued use of placental serum did not incite uterine contractions. The general improvement noticed after the first injection of the serum, however, no longer made me feel concerned as to the termination of labor.

CASE 5.—D. M., aged 30, secundipara, menstruated last June 15, 1911. Admitted to the hospital March 4, 1913, complaining of severe headaches, dimness of vision and slight edema of the legs. Urine was full of albumin, and hyaline and granular casts. March 5, at 2 p. m., patient was injected with 11 c.c. of placental serum, intravenously. After the first injection she appeared improved, the albumin and casts diminished in quantity, she developed a polyuria, and in three days all the symptoms pointing to eclampsia disappeared. March 6, patient was again injected with 22 c.c. of placental serum. March 7, another injection of 20 c.c. was given. She was delivered March 7, at 3 p. m., of a female child weighing 8 pounds. In this patient the serum was used to cause the onset of labor, as mentioned above.

CASE 6.—A. S., aged 28, primipara, had two miscarriages, first in the fifth week, second at two months. Menstruated last Dec. 1, 1912. About two weeks later, patient began to complain of some distress over the lower portion of the sternum. Same continued until about January 15, when she began to vomit, increasing in severity and not limited to any period of the day.

She was admitted to the Jewish Maternity Hospital March 17. Fifteen c.c. of placental serum were given intramuscularly with no appreciable effect. Two drams of the serum was given every two hours by mouth. March 18, 10 c.c. of serum were injected; patient still vomited, but general appearance was better. Blood-pressure 120. March 19, 20, 21 and 22, patient's condition was better; she retained some food. March 23 and 24, patient felt much worse, did not retain any food, very restless and had severe headache. Blood-pressure 111. Patient felt slightly better on the 25th, 26th and 27th. March 28, patient grew worse and I decided to inject the serum intravenously. Ten c.c. were given. Patient had slight reaction and some precardial pain lasting about five minutes. The following day the patient did not vomit. March 30, patient once vomited during the night. March 31, patient began to vomit again, but not so severely. Partly retained food. Urine analysis showed no albumin or casts.

The diet for these patients was not limited. The nurse was instructed to give them all the food they asked for. As a general principle they were given lesser quantities at more frequent intervals. Vomiting was not a contra-indication for food. The patients' preference for a particular variety of food was always attended to. They were all given large quantities of water to drink. As a rule, they were kept in bed, and as soon as the general condition improved they sat up on a chair and even walked about the room. These patients as a rule do not sleep and are restless, and this was controlled by trional in sufficient doses. Sleep is essential in these cases of exhaustion.

ECLAMPSIA AND ITS TREATMENT

The great advance of surgery in recent years, and the safety with which the entrance into the peritoneal cavity has been made, very naturally have opened a new field for the relief of this condition, and the treatment of eclampsia soon became a battle-field for those who held opposing views.

The maternal and fetal mortality has always been so great that the obstetrician was very eager to avail himself of procedures, radical in nature, but surgically apparently correct, and based on sound reasoning. This brought forth two distinct groups of men: (*a*) those who advocated the immediate emptying of the uterus, either by vaginal or abdominal cesarean section, and (*b*) those who adopted a watchful waiting policy, and treated the convulsions, instead of striking at the root by interrupting pregnancy.

At this juncture, I wish to state that while statistics are mathematically correct, still the point of view of the author is usually injected into them, and of necessity they may be in a measure so influenced that their intrinsic value is partly lost. We cannot and should not treat our patients dogmatically. No two cases in medicine act alike. To adopt a general rule and apply it universally eliminates one's personal experience and judgment. Particularly is this true in eclampsia. In our experience we seldom found two cases which acted exactly alike and in which precisely the same form of treatment could be instituted. Therefore to maintain that every case of eclampsia must be treated by a radical surgical operation is just as wrong as to assume that eclampsia must be let alone and treated medically.

How then are we to proceed in the treatment of this condition? Are we to adopt one or the other of the two methods, or are we to individualize our patients and institute treatment accordingly?

I believe that eclampsia is produced by some toxic substance circulating in the maternal blood, the origin of which is most probably in the products of conception. In order to cure the patient we must remove

membrane which later becomes tinged pink and is somewhat moist. On bouillon the growth appears only on the surface and resembles that first seen on the agar-tubes; no coloration is imparted to the fluid. On potato a grayish-white crumpled dry covering with no tendency to spread is seen. In milk, growth takes place only on the surface, and is of a white to pink color; the milk is not coagulated. Microscopically, true branching threads are seen and in old cultures spore-like bodies are distinctly visible within the threads. Motility was not observed. The filaments stain well with methylene blue and by Gram's method. There is no musty odor as is frequently present in other varieties of this group.

To test its pathogenicity to animals, two pigs were injected intraperitoneally and subcutaneously. One pig died on the seventh and the other on the ninth day. Sections from the internal organs were made and nothing was found, showing quite clearly that they died from the toxemia.

I sent a culture to the New York Post-Graduate Laboratories for identification of the species and they suggested that I consult Dr. Charles Thom of the Agricultural Department. This I did and the following is the report of the chief of division of pathology:

You are advised that this organism is one with which we have never previously worked. It appears to belong to the lower order of actinomycetes (Lachner-Sandoval), and as near as we can get to placing it at this time, can only say that it corresponds closely to the *Streptothrix foersteri* (Cohn). Should we be able to place it more definitely from future study we will advise you.

I neglected to say that a blood-culture in this case was negative; the thread test showed only a very faint stain near the cardia; repeated tests were negative.

In closing I wish to thank Medical Inspector E. R. Stitt, U. S. N., Dr. Charles Thom and Dr. J. R. Mohler, chief of the Division of Pathology, Department of Agriculture, for their assistance.

826 Connecticut Avenue, N.-W.

New and Nonofficial Remedies

The following additional articles have been accepted by the Council on Pharmacy and Chemistry of the American Medical Association. Their acceptance has been based largely on evidence supplied by the manufacturer or his agent and in part on investigation made by or under the direction of the Council. Criticisms and corrections are asked for to aid in the revision of the matter before publication in the book "New and Nonofficial Remedies."

The Council desires physicians to understand that the acceptance of an article does not necessarily mean a recommendation, but that, so far as known, it complies with the rules adopted by the Council.

W. A. Puckner, Secretary.

ARLCO-UREASE.—Arlco-urease is a standardized preparation of the urealytic enzyme obtained from the soy bean, *Soja hispida*.

Actions and Uses.—Arlco-urease decomposes urea into ammonia and carbon dioxide. It is employed in the determination of the amount of urea in the urine, blood and other body fluids.

Dosage.—The procedure consists in treating the urine with urease, drawing the ammonia into fiftieth-normal acid by means of an air current and titrating the residual acid.

Manufactured by the Arlington Chemical Co., Yonkers, N. Y. No U. S. patent. U. S. trademark applied for.

In the preparation of arlco-urease, soy bean meal is treated with water and the aqueous extract filtered. The solution so obtained is precipitated by pouring into acetone, the precipitate washed and dried by desiccation over dehydrants. The dried precipitate is finely ground and standardized by methods reported by Van Slyke and Cullen. (*Proc. Soc. Exper. Biol. and Med.*, Dec. 17, 1913.)

Arlco-urease is a fine, white powder, *freely soluble in water*, forming an opalescent solution.

If 0.1 Gm. of arlco-urease be dissolved in 1 Cc. of water and the solution added to 5 Cc. of a 1 per cent. solution of pure urea, the mixture should hydrolyze 0.0168 Gm. of urea in fifteen minutes at 25 C. or in correspondingly less time as the temperature approaches 50 C. as a maximum.

UREASE-DUNNING.—Urease-Dunning is a highly potent and standardized preparation of the urealytic enzyme obtained from the soy bean, *Soja hispida*.

Actions and Uses.—In the presence of water urease-Dunning decomposes urea into ammonia and carbon dioxide, resulting in the formation of ammonium carbonate. It is employed in the determination of the amount of urea in the urine, blood and other body-fluids.

Dosage.—For the estimation of urea in urine, it is recommended to determine, with volumetric hydrochloric acid and methyl orange, the alkalinity of a portion of the specimen that has not been treated, and compare this, as to alkalinity, with an equal quantity of the same specimen which has been treated with the enzyme, the difference representing the ammonium carbonate formed by the breaking up of the urea present.

Manufactured by Hynson, Westcott & Co., Baltimore, Md. No U. S. patent or trademark.

Urease-Dunning Tablets.—Each tablet contains 0.025 Gm. of urease, Dunning.

Urease-Dunning, is a fine, almost white powder with little taste or odor; it is soluble in slightly alkaline water and represents the urea-converting enzyme of soy bean in a condition of high potency. It is practically free of the water-soluble proteins, which are precipitated by hydrochloric acid, and of proteins that are insoluble in water. Aqueous solutions deteriorate after standing a few days.

Urease-Dunning, may be assayed as follows: To 5 Cc. of a 2 per cent. solution of urea, in water previously heated to from 38 to 40 C. and 25 mg. of urease-Dunning (one tablet), and keep the mixture at the temperature stated for one hour; then add 0.05 Cc. of methyl orange test solution, and titrate with tenth-normal hydrochloric acid. From 20 to 25 Cc. should be required to neutralize it, equivalent to from 60 to 75 mg. urea.

ELECTRARGOL FOR INJECTION.—This dosage form of an accepted proprietary article has been accepted for inclusion with New and Nonofficial Remedies.

Supplied in the form of ampules, each containing electrargol 10 Cc. in the non-isotonized condition.

STYPSTICK APPLICATORS, ALUM 75 PER CENT.—This preparation has been accepted for inclusion with the appendix to New and Nonofficial Remedies Wooden sticks 6½ inches long, tipped with a mixture of alum, 75 per cent., and potassium nitrate, 25 per cent., packed in glass tubes. Each stick is to be used but once.

Prepared by the Antiseptic Supply Co., New York.

Philippine Health Report for Last Quarter 1913.—The report of Victor G. Heiser, Director of Health, for the last quarter of 1913, states that there are now over 60,000 less deaths per annum than in 1905. This reduction occurred almost entirely in the preventable diseases and therefore is a reasonably correct index of the effect of the work of the health authorities. It is said that if the knowledge now available could be effectively applied another 100,000 deaths could be prevented by reducing the rate for tuberculosis, malaria, beriberi and its indirect effects and the intestinal diseases. That the director is not receiving the fullest support during the present governmental administration, as has been hinted before, is intimated when the director says: "The organization which has already brought about a reduction of 60,000 deaths per annum is believed to offer the best hope, if permitted to work along unhampered, of bringing about this further improvement; but in order to achieve any considerable result the cooperation of the entire public is essential." One case of human plague was found during the quarter, but no infected rats. Six cases of cerebrospinal meningitis were found, making twenty in all since the outbreak of the disease. Cholera continued in sporadic form, 104 deaths in 147 cases having occurred in Manila, making a total of 161 cases and 110 deaths since the beginning of the trouble, August 24. The disease also occurred in a number of the provinces, but in each instance there were but few cases, and prompt measures stopped its spread.

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SATURDAY, JULY 11, 1914

SOME FEATURES OF MEDICINE IN BABYLONIA AND ASSYRIA

The successful study of the history of medicine during what Renouard has called the Age of Foundation, including the primitive and sacred, or mystic periods, requires a combination of many talents in those who would examine the original sources of that history. In those early ages the beginnings of medicine were intertwined with a group of sciences, the interpretation of which calls for cyclopedic information and long experience in the domain of ancient learning. In a most interesting address before the Royal Society of Medicine in London, Morris Jastrow, Jr.,[1] of the University of Pennsylvania reviewed some of the features of the medicine of the Babylonians and Assyrians, our knowledge of which is derived almost exclusively from the great library of clay tablets gathered in his palace by King Ashurbanapal of Assyria, who ruled from 668 to 626 B. C. About 30,000 fragments of these tablets, among which are at least 800 that may be placed in the category of medical texts, were discovered in 1849 near the site of Nineveh and are now housed in the British Museum.

No means are available at present by which the age of the medical tablets from which the scribes of the Assyrian king made their copy may be determined. As it is characteristic in general of the literary productions of the ancient Orient that the old is preserved intermingled with the new, it is highly probable that in these medical texts we have the accumulated experience of the past combined with the science of the age in which the compilation was made. Jastrow estimates roughly that the period of the Assyrian records which contain the treatment of disease may be placed at least 2000 B. C., thus far antedating the centuries in which the name of Hippocrates (460 B. C.) attained its earliest fame. This fact emphasizes the contention made by medical historians that the origin of medicine must have been nearly contemporaneous with the beginnings of civilization.

Medicine began in an age of wonder. So long as disease was regarded as the manifestation of supernatural powers, it is only natural that crude and bizarre notions should have arisen with respect to the attitude to be taken by man toward the "celestial creatures of his handiwork." Penetrating the veil of the mystic, real human characteristics frequently make their appearance and appeal to us with a decidedly modern force. Jastrow states that a famous code dating from about 1950 B. C. includes, in the portion devoted to injuries, the laws with regard to fees for surgical operations, as well as the fines for fatal errors on the part of the surgeon. The fee in the case of a successful operation is regulated according to the station occupied by the patient. The ordinary freeman pays 10 shekels for a successful operation on the eye or elsewhere, while a member of the ruling class gets a reduction of 50 per cent.; and in case the operation is performed on a slave the owner pays 2 shekels. For the setting of a bone or the cure of some internal injury the fee is 5 and 3 shekels, respectively. The punishment for the failure of an operation, on the principle that the physician had no right to take the risk, similarly varies according to the position of the patient. If a slave dies as a result of the operation, the surgeon is to replace the slave by another; if the slave loses an eye the physician must pay one-half the value of the slave. If, however, it is a freeman who dies or loses an eye through the operation, the procedure is quite simple — the physician's hand is cut off. The beginnings of specialization in surgery are also indicated at this early period; for the code distinguishes between the ordinary surgeon and the veterinary, the latter being spoken of as the "cow- and sheep-healer" to whom penalties of failure likewise pertain. The physician, as surgeon, was sharply differentiated from the healer of diseases, reminding one of the custom of distinction prevailing in Great Britain, which may, in some of its aspects, be a survival from a very early period.

As in primitive medicine elsewhere, the Babylonian-Assyrian treatment was never dissociated from incantations. If evil spirits were the causes of disease, obviously they must be propitiated. A cure, therefore, involved driving the demon out of the body, either by force or by coaxing. Dr. Jastrow naively remarks that incantations as a means to this end are therefore to be viewed as the antitoxins of primitive medicine, acting primarily on the demons, and merely as a secondary result curing the patient. The introduction of a number of accessories in medical treatment has an incidental origin. Through experience it was found that in certain common diseases such as indigestion, diarrhea, constipation, colds, headaches and fevers, certain articles of food and certain herbs, plants, seeds and juices were beneficial. Primitive logic, says Jastrow, concluded that what was good for man must be

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1. Jastrow, Jr., Morris: The Medicine of the Babylonians and Assyrians, Proc. Roy. Soc. Med., 1914, vii, Section of the History of Med., p. 109.

bad for the demon, and accordingly the remedies were used as helpful accessories to the powerful incantation formulas, and were symbolically introduced in the ritual which accompanied the direct medical treatment of disease. This aspect of magic rites helps us to understand another phase of early medicine, some features of which have been preserved almost to the present day — the custom of administering concoctions and mixtures that are primarily nasty and ill-smelling. Such materials as the feces and urine of man and animals as well as all sorts of decaying matter were employed.[2] Doubtless it was hoped originally to disgust the evil spirits by foul odors and drive them away. The priests, being quick to incorporate in religious practices the popular medical experience of the day, have rendered the bond between incantation rites and medical treatment indissoluble for all time.

Precisely as incantations and the allied practices were resorted to when the evil had come, divination was employed to forestall the future. It was the forerunner of preventive medicine. Thus came about the inspection of the liver in a sacrificial animal, the observation of the young at birth, etc. Indirectly such procedures acted as a real stimulus to the study of anatomy and physiology, both normal and abnormal; and in the early Assyrian periods this was not confined to animals

Aside from the magic ritual the medical literature of Babylonia-Assyria contains more specifically therapeutic advice, some of which may be mentioned briefly. The use of licorice root and of salts in stomach disorders is by no means irrational. Some of the measures to alter or promote the circulation are rather drastic from the point of view of the patient. "If a man has stomach pain let that man sit on his feet and have boiling juice of sikruti cassia poured over him and he will recover." Another prescription reads: "Let him kneel on his feet and let cold water flow over his head." Again, "Place his head downwards and his feet up, strike his cheek forcibly, rub him violently, say to his stomach 'Be good'; with the left thumb manipulate his buttocks fourteen times, manipulate his head fourteen times, and roll him on the ground." The words of admonition to the stomach sound like the psychic healing of to-day, and the manipulations of the body presage massage and other methods of modern physical therapy. Nor was the ancient art of dispensing the drugs devoid of a recognition of the importance of palatability; for we are told in some cases of the alternatives of taking the medicine in wine or water. Over one hundred drugs are included in the medical texts thus far published relative to this early period, and the list will become larger when the means of identifying many of the ancient names are afforded. Familiar names appear everywhere: mint, licorice, caraway, cassia, mustard, colocynth, anise — to mention only a few of them. Elaborate recommendations for their use are furnished in the cuneiform texts. Polypharmacy was common even among the ancients. One prescription includes eight distinct drugs for heart-disease; another, six for jaundice. Even dietotherapy finds a place in this early system of medicine.

Human nature appears to have been much the same in all ages. Dr. Jastrow says that the Babylonian physician of old included the old magical rite in his library copy as a remedy to be resorted to in the last instance; and this reminds us that even at present it is not uncommon for the quack, the herb-doctor and the patent-medicine man, who may be regarded as the modern representatives of the old Babylonian exorcisers, to be appealed to by patients in the moment of despair, when rational remedies seemed incapable of affording relief.

THE DIAGNOSIS AND TRANSMISSION OF PLAGUE

The outbreak of plague in Manila in 1912 aroused renewed attention to the methods of diagnosis applicable to this infection. Dr. Schöbl of the Biological Laboratory at the Bureau of Science of the Philippine Islands tested some of these methods.[1] The diagnosis of plague could be safely made in the majority of cases from a microscopic examination of the liquid aspirated from the bubo. Out of fifteen patients examined, fourteen gave positive blood-cultures. The importance of this mode of examination in diagnosis is evident from the fact that a positive blood-culture was obtained in practically every patient examined in the febrile stage of the disease, even when buboes or signs of pulmonary involvement had not been detected clinically. It was also found that *Bacillus pestis* may be detected in the circulating blood of patients, even those who subsequently recover. The period of time during which the micro-organism circulates in the blood-stream is evidently short and irregular. In agreement with the Indian commission, the occasional early occurrence of plague bacilli in the circulation was observed. The possibility of detecting the bacillus in this way increases in proportion with the quantity of blood used for culture. The best chance to recover the organisms from this fluid seems to be in the stage of high fever and general prostration.

Dr. Schöbl remarks that in consideration of the ephemeral character of the septicemic stage of plague, as evidenced by repeated blood-cultures from patients who recovered, one can hardly avoid the impression that a certain degree of septicemia exists in every case of plague. The septicemia may be of an irregular and fluctuating type; and mixed infection (with streptococcus or pneumococcus) may be encountered.

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[2] Compare Paullini, K. F.: Dreck-Apotheke, wie nämlich mit Koth und Urin die meisten Krankheiten und Schäden glücklich geheilt worden, 1714.

[1] Schöbl, O.: Bacteriological Observations Made During the Outbreak of Plague in Manila in 1912, Philippine Jour. Sc., Trop. Med., 1913, viii, 409.

The agglutination test is regarded by Schöbl as of no value for the diagnosis of plague, as it was found positive in convalescents only. Although the technical difficulties of carrying out the reaction have been reduced,[2] positive agglutination of bacilli by the patient's serum cannot be obtained in the first week of the disease. Therefore, the isolation of plague bacilli from the body of the patient is still the only quick and safe method of plague diagnosis.

With respect to the possibilities of transmitting the plague directly, the presence of numerous plague bacilli in comparatively insignificant skin lesions during the life of the patient is noteworthy. Furthermore, the fact that a patient without any apparent bubo, who is not so sick as to be detained from his daily occupation, may expectorate large numbers of plague bacilli, is of great importance with regard to the communication of the disease. Quoting the Manila investigator, it is obvious that the last-mentioned condition might, and very likely does, give rise to an epidemic of pneumonic plague if the atmospheric and sanitary conditions are favorable.[3]

CHRONIC CONSTIPATION

To recur to a subject so trite as that of chronic constipation may appear to be an unpardonable editorial sin. Yet every day brings to the routine of the practitioner real or imagined cases which deserve to be managed with intelligence and success. It is, after all, not always the rare and the unique which offer to the physician the greatest opportunity for useful service. There are baffling problems constantly with us; and many a common disease like measles or tuberculosis, doing damage to thousands, deserves far more to be kept in the foreground of professional interest than does the occasional medical anomaly that is always likely to divert attention from the more persistent dangers.

We do not mean by this that new "cures" need to be devised from month to month for familiar difficulties, though in truth a satisfactory cure is the goal which practical medicine must strive to reach. What is, perhaps, needed to-day far more than hasty suggestions and novel therapeutic hints is a critical attitude and a thoughtful analysis of present-day treatment. The "busy practitioner"—to use a phrase made to excuse much that is inexcusable—denies himself the privilege, or fails to enforce on himself the duty, of seriously reviewing the situations which he is called on to confront. He too often neglects to derive the inestimable advantage which an extensive experience of repeated successes and failures in the same field ought to afford. To the real physician every case becomes a new problem rather than a recurrence of an old experience.

These reflections have been awakened by a recent lecture by Einhorn[1] on chronic constipation and its treatment. He protests, for example, against making a fetish of the theory of auto-intoxication. Many an individual has been subject to unnecessary nervous strain by the ever-present fear of some indefinable poisoning conceived as certain to follow an impending constipation. Einhorn quotes the contentions of the clinician Dunin in Warsaw that the familiar untoward symptoms and nervous phenomena are not necessarily the result of constipation, but may actually be the cause of it. Sedatives like bromids are known to relieve in some of these cases. A good indication of the fallacy of charging intestinal intoxication to constipation is seen in the fact that the use of opiates may result in the constipation without consequent headaches, etc.—the expected evidence of alimentary toxicity.

Einhorn cannot agree with the contentions of Schmidt that chronic constipation is the outcome of unusually perfect utilization of the diet. Indeed, it is quite as reasonable to adopt a reversed hypothesis and insist that, because of the longer delay of the alimentary residues in the gastro-intestinal canal, the absorption has an opportunity to become more complete. Here again it is easy to confound cause and effect.

Operative interference has of late been suggested by Arbuthnot Lane and others as a palliative in chronic constipation. Lane's operation and the auto-intoxication hypothesis go hand in hand. Neither of them finds unqualified or hearty favor from those who emphasize the possibilities of rational physical and dietetic therapy. Surgical procedures are eminently justified when anatomic defects are present. The necessity for them in what is called auto-intoxication has, however, been seriously questioned.[2]

Too little attention has been paid to habit and the influence of social conditions on the inherent tendency to frequent and prompt defecation. Even so essential and physiologic a process as this is not infrequently consciously neglected by so-called culture-man and especially by the society woman; or it is not infrequently performed incompletely because carried out in time snatched from some absorbing occupation. The careful study of each patient, the investigation of his habits and temperament, the preaching of the doctrines of rational living, the supplementing of this with appropriate measures of diet and physical conduct — in other words, helpful hygienic criticism and frank education — these are in a large majority of cases of chronic constipation the guides to successful practice and human happiness, both of which the physician tries to cultivate.

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[2] Strong, R. P.: Philippine Jour. Sc., Trop. Med. (*B*), 1907, ii, 155. Strong, R. P., and Teague, O.: ibid., 1912, vii, 194.

[3] Atmospheric Temperature and Pneumonic Plague, editorial, The Journal A. M. A., March 7, 1914, p. 7[illegible]9.

[1] Einhorn, M.: Ueber chronische Stuhlverstopfung und ihre Behandlung, Ztschr. f. diätet. u. physik. Therap., 1914, xviii, 257.

[2] Auto-Intoxication Again Assailed, editorial, The Journal A. M. A., Feb. 28, 1914, p. 701.

NEW FACTS ABOUT HUNGER

The fact that the sensation of hunger is attended with pronounced characteristic contractions of the empty stomach is now beyond dispute. We have already[1] referred to the various ways in which these motor phenomena associated with the "cravings of hunger" may be modified or inhibited. The primary stimulus to the hunger contractions is not to be sought in extrinsic nerves, for the empty stomach completely isolated from the central nervous system has shown typical contractions. These are therefore, in their origin, independent of the central nervous system, and appear to depend on some automatic mechanism in the stomach wall, though the fact of the intrinsic initiation of the gastric movements by no means excludes the occurrence of regulatory impulses from outside of the organ. Indeed, it has now been clearly demonstrated that inhibitory reflexes readily and frequently play on the gastric contractions, checking them and simultaneously modifying the pangs of hunger with which they are accompanied. Hunger is inhibited by tasting or chewing palatable foods; in some individuals the sight and smell of food may produce the same result.

The question at once arises as to the relative participation of various departments of the nervous system in the influences that modify the gastric movements and the sensation of hunger. Some data on this point are already available.[2] It has been shown that the nervous mechanism involves both local centers (Auerbach's plexus in the stomach-wall) and the central nervous system. Stimulation of the sensory nerves in the mouth, esophagus and stomach mucosa inhibits the hunger mechanism by way of the splanchnic nerves as well as through the Auerbach plexus. It has also been shown that practically all stimuli that act on the gastric hunger mechanism via the central nervous system cause inhibition mainly through the splanchnic nerves. This is true, for example, in the case of the sight or smell of food on the part of dogs in hunger.

When the vagus influences are excluded the tone of the stomach is greatly lowered.[3] Evidently, then, these nerves are concerned with the maintenance of this tone, and it becomes of importance to learn what influences inhibit the gastric hunger mechanism by way of the splanchnic nerves, already referred to, and what perchance by depression of the vagus tone. A. J. Carlson[2] of the University of Chicago has continued his work in this field of the physiology of the stomach by investigating the influence of the factors or conditions commonly associated with the lowering of the tonus of the central nervous system and the skeletal muscles; such as sleep, stimulation of the cutaneous nerve-endings for heat, excessive muscular activity, as well as the factors that increase the skeletal neuromuscular tonus, such as stimulation of the nerve-endings for cold in the skin, moderate muscular activity, seeing and smelling palatable food, etc. Moderate muscular activity (walking) has no direct influence on the gastric hunger mechanism. Intense muscular activity (running) inhibits the hunger mechanism in direct proportion to the intensity and duration of the exercise. Feeble hunger contractions may continue during moderate running. There appears to be some increase in the gastric tonus and hunger contractions as an after-effect of moderate exercise. Stimulation of the nerve-endings for cold in the skin does not affect the vagogastric tone apparatus. If the stimulation is of sufficient intensity it induces (especially in man) a temporary inhibition of the gastric hunger contractions via the splanchnic nerves. A similar inhibition is induced by strong stimulation of the cutaneous nerve-endings for warmth. There is a distinct increase in the gastric tonus and hunger contractions as an after-effect of prolonged and intense stimulation of the nerve-endings for cold in the skin. It is therefore clear that in general the nervous impulses that give rise to the sensation of cold and induce increased neuromuscular tone have no direct action on the vagogastric tonus centers.

During sleep there is decreased activity of the central nervous system in general, decreased tension of the skeletal muscles, of the musculature of the blood-vessels, at least in certain parts of the vascular system, of the urinary bladder, etc.; in short, a lowered activity of all the neuromuscular mechanisms so far investigated. One might have expected that so far as the tone of the empty stomach depends on a central influence by way of the vagi, the gastric tone and hunger contractions should be diminished during sleep. Instead of being depressed in sleep, however, the hunger contractions continue with the same vigor as during the waking state, and in many instances with increased vigor. In man, intellectual processes (attention, reading, figuring, arguing) have no distinct influence on the course of the hunger periods. Actual anxiety causes temporary inhibition (probably through the splanchnics).

It is a common belief that smoking shortly before a meal leads to depression of hunger and appetite. The correctness of this has been demonstrated by Carlson.[4] The explanation is probably to be found in the stimulation of the sensory nerve-endings in the mouth—a process known to inhibit the gastric hunger contractions in proportion to the intensity of the stimulus. Smoking stimulates the nerve-endings in the mouth in varying degrees according to the kind of tobacco used. Smoking frequently involves stimulation of nerve-endings in the gastric mucosa owing to the swallowing of saliva containing nicotin, oils, tannic acid, and probably other irritating substances.

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[1] The Call of the Empty Stomach, editorial, The Journal A. M. A., Oct. 4, 1913, p. 1300; The Voracity of Certain Diabetics, ibid., Feb. 21, 1914, p. 621.

[2] Carlson, A. J.: Contributions to the Physiology of the Stomach, XV. The Nervous Control of the Gastric Hunger Mechanism (Man, Dog), Am. Jour. Physiol., 1914, xxxiv, 155.

[3] Carlson, A. J.: Contributions to the Physiology of the Stomach, VI. A Study of the Mechanism of the Hunger Contractions of the Empty Stomach by Experiments on Dogs, Am. Jour. Physiol., 1913, xxxii, 369.

Carlson remarks that the observations made by him seem incapable of any other interpretation than that the vagogastric tone apparatus, so far as it concerns the empty stomach, occupies a unique and physiologically isolated position, in the way of nervous control, while the inhibitory apparatus via the splanchnic nerves is readily influenced by central and reflex processes. The biologic significance of this exceptional and unique isolation of the tonus apparatus of the hunger mechanism probably lies in the importance of the hunger mechanism being "regulated on its positive side primarily by the state of nutrition, that is, through the blood, rather than by the fleeting changes in the nervous system."

Current Comment

SOME PHENOMENA DUE TO MAGNESIUM SALTS

The enthusiasm which frequently attends the introduction of new methods in therapy, or new devices and procedures in surgical and other fields of technic, sometimes causes the shortcomings and possible limitations of the novelties to be overlooked. A new product or process may be heralded with laudations of its accomplishments. Hopes of unexpected advantages to be reaped from the application of a promising discovery are awakened, only to be shattered or modified by some subsequent finding of unsuspected difficulties or unannounced defects Such expectations and disappointments are familiar to all practitioners of medicine. A promising sign which bears the stamp of an age of scientific criticism is that innovations in medical and surgical practice are being controlled more rigidly, criticized more freely and subjected to severer tests than ever before. The promoter of new methods can no longer afford to risk his reputation on the chance of accidental success. Every requirement set by the best contemporary standards of scientific merit must be met and the outcome announced boldly and frankly. To illustrate this we may refer to a recent experience of Dr. Charles H. Peck[1] of the Roosevelt Hospital in New York, in a series of five cases observed by Dr. Meltzer and himself after operation under magnesium sulphate-ether anesthesia (Meltzer's method). In three cases hyaline casts, which completely disappeared after forty-eight hours, were found in the urine. In one of the three a faint trace of albumin occurred; in the other two, none. In two cases hyaline and granular casts and a trace of albumin were found, persisting in one for six days, and in one for two days or more, the urine becoming normal on the fifth day. In none of the cases was there any later evidence of kidney irritation. In all, magnesium could be demonstrated in the urine for several days. No casts were present in the urine before operation in any case. This report led to a prompt further experimental investigation of the matter in Dr. Meltzer's laboratory at the Rockefeller Institute for Medical Research.[2] Epsom salt in sublethal doses, with and without ether by insufflation, was given to dogs intramuscularly and intravenously. In all, many hyaline casts appeared in the urine. They were most abundant from three to six hours after the injection and disappeared in twenty-four or at most forty-eight hours. No epithelial or granular casts were found and no measurable albuminuria occurred. Ether alone did not produce casts, and ether and magnesium produced no more than magnesium alone. In one experiment, magnesium chlorid gave the same results as the sulphate. The essential point is that hyaline casts in large numbers can be produced in dogs at will by injections of magnesium salts. Epithelial and granular casts and albuminuria do not occur, and the appearance of the hyaline casts is only temporary. In this connection it seems desirable to point out that, contrary to the generally accepted view, magnesium salts may be rapidly absorbed from the intestines, according to recent observations of Auer and Meltzer.[3] In view of their experiments, these investigators conclude that the method of injecting magnesium salts into the small intestines after laparotomies, as recommended by McCosh and practiced by some surgeons, contains an element of considerable danger.

PUBLIC HEALTH IN IOWA CITIES

Much of the discussion concerning public health conditions, whether in the nation, state or municipality, is necessarily general in character, owing to the lack of exact information regarding details. Any contribution to our knowledge of existing conditions is therefore of value. In the March issue of the *Journal of the Iowa State Medical Society* appears a report on a survey of public health work of twenty-seven Iowa cities and towns, representing a total population of 197,310. The total amount expended for public health in the twenty-seven cities was $20,950, an average of $779 per city a year, and a total per capita expenditure of 0.106 cent. In only three cities, Cedar Rapids, Burlington and Oskaloosa, did the expenditure for public health exceed *10 cents per capita a year.* In five cities, Charles City, Carroll, Sheldon, Indianola and Harlan, the public health expenditure could be estimated only in mills, while one city of 2,500 inhabitants — Jefferson — expended no money at all for this purpose. Burlington pays its health officer a salary of $1,300 a year, Oskaloosa pays $1,200, Ottumwa, $750, Cedar Rapids, $720 and Waterloo and Muscatine pay $600 each. In Charles City, Knoxville, Algona, Jefferson and Lake City, the health officer receives no compensation whatever. In Shenandoah and Osceola the health officer is allowed fees for services rendered, while the other cities and towns pay from $25 to $150 a year for public-health work. Only one city, Oskaloosa, has a whole-time health officer. In five towns medical inspection of schoolchildren is one of the duties of the health officer. Two cities, Oskaloosa and Boone, have municipal laboratories. If the condition of birth and death registration in Iowa were such as to permit a comparison over a long period of time, between the death-rate in those cities which have no health organization and the death-rate in those which have even an inadequate one, the value of the facts elicited by this survey would be greatly increased. Unfortunately, Iowa is not in the registration area and has no modern system of recording births and deaths. The only conclusion that can be drawn from the report is that the amount of attention given and money expended for municipal health-control in Iowa is far too small to secure the desired result, namely, the reduction of the death-rate and the prevention of controllable disease.

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[4] Carlson, A. J., and Lewis, J. H.: Contributions to the Physiology of the Stomach, XIV. The Influence of Smoking and of Pressure on the Abdomen (Constriction of the Belt) on the Gastric Hunger Contractions, Am. Jour. Physiol., 1914, xxxiv, 149.

[1] Peck, Charles H.: The Occurrence of Casts in the Urine Following Magnesium Sulphate-Ether Anesthesia (Meltzer), Proc. Soc. Exper. Biol. and Med., 1914, xi, 103.

[2] Gates, F. L.: The Experimental Production of Hyaline Casts by Injections of Magnesium Salts, Proc. Soc. Exper. Biol. and Med., 1914, xi, 102.

[3] Auer, J., and Meltzer, S. J.: The Fatal Action of Magnesium Salts by Absorption from the Intestines and the Resuscitation by Calcium, Proc. Soc. Exper. Biol. and Med., 1914, xi, 95.

A WILLING SCAPEGOAT

Since The Journal instituted its educational campaign for the enlightenment of the public against frauds in medicine, it has become fashionable for every quack and "patent medicine" faker who is haled into court, to charge that the American Medical Association is behind his prosecution. Such charges, of course, are without foundation. The duty of the American Medical Association is done when it has turned the bright light of investigation and publicity on the evils of quackery. It is nevertheless true that, nowadays, there is hardly a case involving the prosecution of a quack or a manufacturer of fraudulent proprietary remedies in which the American Medical Association is not charged with having set the machinery of the law in motion. To instance one example: A few weeks ago, two quacks, August Kroening and B. J. Chenoski, who had operated in Iowa for several months under the firm name of the "Des Moines Specialists," were fined $1,000 and $500 respectively, for using the mails to defraud. According to the Des Moines newspapers, one of the attorneys for these fakers asked Postoffice Inspector Caine, who had caused their indictment, if the American Medical Association were not back of the prosecution, and if the Association had not offered him a reward for securing a conviction. Such insinuations are made for no other purpose than that of prejudicing the jury. Having no basis in fact, they are, necessarily, not followed up by those making them. Kroening and Chenoski were found guilty and Judge Smith McPherson of the federal court in assessing the fines is quoted, by the newspaper which reported the case, as saying:

> The charge has been made but no evidence presented in substantiation of the statement that the American Medical Association had influenced the federal officers in prosecuting these men. I do not know whether it is true, but if it is, the Association is to be commended, likewise everyone else who assisted in exposing their methods and bringing them to justice.

While The Journal heartily agrees with Judge McPherson's sentiments, it has to admit that the American Medical Association had no hand whatever in bringing these men to justice — at least directly. The Journal, in its issue of June 19, 1913, exposed the methods of the "Known Doctors" and the concern's promoter, B. J. Chenoski. Possibly this publicity had something to do with the authorities taking action against Chenoski and his accomplice, Kroening. Certain it is, that this very publicity sooner or later will make quackery less profitable and popular; for of all frauds perpetrated on the public, medical frauds can stand publicity least.

ASPHALT PAVING AND HEALTH

By some philosophers the earth has been conceived of as a single living organism which lives its own life distinct from the living beings which inhabit it. Some such idea seems to possess Stérian,[1] who warns against the increasing practice of covering the surface of the earth with an impermeable covering of asphalt as is being done by the larger cities. Stérian makes four counts in his indictment of asphalt pavements: 1. They create a tendency to unforeseen excavations from the accumulation of subterranean gases which find no outlet. 2. The roots of plants, especially trees, are surrounded by an atmosphere deprived of nitrogen which plant life needs and ordinarily obtains from the penetration of the outer air through the porous earth. 3. The pavement, not permitting the escape of polluted water, favors putrefaction and renders the lower strata of the atmosphere unfit to breathe. 4. Such pavements favor insolation. Stérian's article is interesting but not convincing. Possibly the fact that only a small proportion of the earth's surface is covered by an impermeable coating has prevented these disadvantages from making themselves unpleasantly manifest. The collection of subterranean gases so as to cause inconvenience is certainly not a common experience. The danger from the passage of gas from leaky gas-mains into houses is of importance, but Stérian does not mention it. The effect on vegetation appears to be real and should be obviated by securing open grass-plots around trees. The objection to asphalt paving because it pollutes the air is of minor importance, because, despite the objection of Stérian, asphalt is one of the most easily cleaned of all pavements. While in our opinion the objections of Stérian need not cause the residents of the boulevards to move to unpaved streets, they indicate the desirability of reliable information on the disadvantages as well as the advantages of modern advances in city building

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[1] Stérian: Presse méd., June 17 1914, p. 701.

Medical News

CALIFORNIA

Personal.—Dr. Fletcher G. Sanborn, Los Angeles, has been placed in charge of the new hospital of the Packers' Association at Larson Bay, U. Y. P. H., P. O., Alaska.——Dr. George W. Brown has been appointed oculist and aurist of the United States Pension Bureau, Los Angeles.——Dr. Frederick C. Gerlach has succeeded Dr. David A. Beattie as a member of the Board of Health of San Jose.——Dr. Bradford Woodbridge, Roseville, is reported to be critically ill in San Francisco, as a result of a runaway accident.

Fresno will Build Open-Air Schools.—The Board of Education of Fresno has announced its building policy, which contemplates the purchase of entire blocks for schools, with the idea of having each school located at the east end of the block. The buildings are to be of the open-air type, a solid wall of windows on one side and an open-air corridor with a western exposure. The city of Fresno recently made an appropriation of $450,000, of which $350,000 is to be devoted to the building of schools and $100,000 to the purchase of sites for the same.

COLORADO

New Officers.—Colorado Springs Clinical Club, May 27: president, Dr. Alexander C. Magruder; secretary-treasurer, Dr. Elmer Timmons.

Personal.—Dr. A. Hart Goodloe, Canon City, has been provisionally appointed physician to the state penitentiary, vice Dr. Thomas D. Palmer, deceased.——Dr. Edward F. Lake, Denver, who has been under treatment for cancer in Baltimore, has returned home.

CONNECTICUT

Centennial Dinner Alumni.—The Alumni Association of Yale Medical School held a dinner at the University Dining Hall, June 15, 1914, in commemoration of the one hundredth anniversary of that institution. A decorative menu was prepared containing portraits of the faculty. Addresses were delivered by many of the faculty of both the medical college and university. Dr. William H. Carmalt was toastmaster.

Provisional Gift of Hospital to Town.—Commodore E. C. Benedict has promised to give the Greenwich Medical Society a present of a hospital for the town of Greenwich, to cost $125,000, as a thankoffering for the recovery of his wife from a severe illness. This is conditional on the town giving up its rival hospitals: one 3 miles from the village, known as the General Hospital, and the other in the village known as the Greenwich Hospital. It is proposed to convert the General Hospital into an isolation hospital and the Greenwich Hospital into a private institution.

ILLINOIS

County Tuberculosis Sanatorium.—The new tuberculosis sanatorium for La Salle County is to be erected directly west of the men's ward of the infirmary, facing the park leading into the grounds. Work on the building, which is to cost about $3,000, will be commenced immediately.

Site for Epileptic Colony Purchased.—On June 30, the state of Illinois purchased 1,054 acres of land near Dixon, for which $216.40 per acre was paid. This will be the site of the state colony for epileptics, for which $500,000 has been appropriated. The work of erection of the building will soon be inaugurated.

Personal.—Dr. and Mrs. Louis Becker, Knoxville, have sailed for Europe.——Dr. George L. Eyster, Rock Island, while working on his automobile, was severely burned by gasoline.——Dr. R. Carl Dienst, Aurora, has been appointed surgeon and laboratory physician to the Marconi Wireless Telegraph Company, with headquarters at Mashall, Cal.

Chicago

Personal.—Drs. Isaac A. Abt and family, Willis O. Nance, Franklin H. Martin and Raymond W. McNealy have sailed for Europe.——Dr. Robert P. Preble had the honorary degree of M.A. conferred on him by the University of Michigan.——Dr. C. O. Schlaack, ambulance surgeon of the Des Plaines Street Station, was injured in a collision between the ambulance and an automobile, June 21.——Fire in the office of Dr. Alexander L. Blackwood, July 2, did damage amounting to $2,000.

Alienists and Neurologists to Meet.—The second annual meeting of alienists and neurologists, under the auspices of the Chicago Medical Society, will be held at the Hotel La Salle, July 13-17. Dr. L. Harrison Mettler is chairman and Dr. William T. Mefford, secretary, of the committee on arrangements. An elaborate program has been prepared, and a large attendance is expected. All meetings will be held at the Hotel La Salle, with the exception of the session of the morning of July 15, which will be held at the Psychopathic Hospital, Harrison and Wood streets.

KANSAS

Personal.—Dr. H. H. Keith, for many years coroner of Shawnee County, is reported to be seriously ill at St. Francis' Hospital, Topeka.——Dr. Walter J. Nichols, Pittsburg, was assaulted and robbed, June 26, near Frontenac.——Dr. O. W. Hughes, Jewell, has retired from practice on account of failing health.

Results of Increased Requirements.—The effect of the increased entrance requirements and more rigid curricula has been demonstrated by the decrease in the number of graduates who have applied to take the examination for license to practice in the state. At the last examination held in Kansas City, June 9, only twenty-four applicants appeared.

Hospital Dedicated.—St. John's Hospital, Salina, which has been erected at a cost of $110,000, was formally dedicated June 28. Dr. John W. Perkins, Kansas City, Mo., was selected as chief of staff of the institution, and the following staff has been appointed: consulting staff, Drs. Winfield S. Harvey, James R. Crawford, James W. Jenney, William H. Winterbotham, Joseph E. Miller and Wilson R. Priest, Concordia; surgeons, Drs. George Seitz, William E. Mowery, John K. Harvey, John D. Riddell and Louis O. Nordstrom; physicians, Drs. James A. Simpson, Charles M. Jenney, Jonathan H. Winterbotham, Howard N. Moses and Oman R. Brittain; obstetrics, Drs. James A. Simpson, Jessie Wheeler and Edgar J. Lutz; pathologists, Drs. Howard N. Moses and Earl G. Padfield; eye and ear, Drs. Carroll D. Armstrong and Andrew G. Anderson; nose and throat, Drs. John W. Simmons and Manuel J. Brown; neurologist, Dr. Oliver D. Walker; x-ray, Dr. Oman R. Brittain; skin diseases, Dr. John W. Neptune; anesthetist, Dr. Earl G. Padfield, and genito-urinary diseases, Dr. Melcher G. Cockey.

LOUSIANA

Loving-Cup for Dr. Dowling.—The State Pharmaceutical Association at its meeting in Shreveport, presented Dr. Oscar Dowling with a silver loving-cup in recognition of his services as president of the State Board of Health.

Detained at Quarantine.—The United Fruit Company's steamer *Cartago*, from Havana, which arrived at New Orleans, June 25, was detained in quarantine until the nature of a case of fever among its passengers could be ascertained. The passenger embarked at Colon, and was taken from the steamer at Havana.

New Medical Journal.—The *Pan-American Surgical and Medical Journal* appeared June 27. It is the official organ of the Louisiana State Medical Society, and has the following staff: editors in chief, Drs. Waldemar T. Richards and Adolph O. Hoefeld; assistant editor, Dr. Merrick W. Swords, and editorial representative for the state society, Dr. Laurence R. De Buys. The first issue of the journal presents a very creditable appearance. It contains much matter of merit. It is proposed to cater to Central American readers by having a portion of the journal printed in Spanish.

MARYLAND

Health Wardens Named.—In accordance with the provisions in the law passed by the last legislature, Maryland has been divided into ten sanitary districts by the State Board of Health. Over each of these districts a physician will be appointed who will be responsible for the enforcement and general health conditions in his territory. The four following health wardens have been appointed: District No. 1, Allegany and Garrett counties, Dr. Francis E. Harrington, Cumberland; District No. 3, Carroll, Howard and Montgomery counties, Dr. William C. Stone, Ellicott City; District No. 4, Baltimore County, Dr. Josiah S. Bowen, Washington; District No. 9, Talbot and Dorchester counties, Dr. Edgar A. Jones, Cambridge. Following the appointments of the four wardens, the board ordered an immediate survey to be made of Dorchester County. The work is to be done under the auspices of the County Medical Society of which Dr. Guy

Steele, Cambridge, is president. At the request of Dr. John Fulton, the State Health Officer, Surgeon-General Rupert Blue of the United States Health Department has detailed Dr. Leslie L. Lumsden and a number of his assistants to help. Dr. Fulton, with Dr. Clifford Woodruff and Richard B. Norment, of the State Health Department, will also take part in the survey. It is proposed that every house in the county be visited and health conditions examined. Many meetings throughout the county are to be held at which there will be talks on matters of sanitation illustrated with stereopticon and moving pictures. The idea is to arouse and instruct the people on health and sanitation, as well as to give the health officers accurate information as to sanitary conditions in the county.

MASSACHUSETTS

Floating Hospital Starts.—Boston's floating hospital made its first trip of the season on June 27. The morning trip was in honor of Isaac Kaffenburg, whose wife donated the money for the trip. The evening trip was Brookline night, the funds for which were provided from a dansant given by Mrs. John A. Curtis.

The Salem Fire.—It is announced that among the physicians who were burned out in the recent Salem fire, three are in straitened conditions, and the Essex South District Medical Society is raising a fund for their relief. The chairman of the Boston School Board offered the governor the services of the school nurses of Boston to relieve the refugees of the Salem fire. The services of Dr. Thomas F. Harrington, as sanitary officer, were also offered.

Harvard Faculty Changes.—Dr. Myles Standish, Boston, since 1886 a member of the Faculty of Harvard Medical School, and for the last five years Williams professor of ophthalmology at Harvard, has been appointed professor emeritus, beginning next September. Dr. Walter Ray Bloor, who has been a member of the faculty of the Medical School of Washington University, St. Louis, has been appointed assistant professor of biologic chemistry.

MISSOURI

Baby Camp Opened.—St. Luke's Baby Camp, Kansas City, was opened June 15. The camp consists of two screened and protected tents, with accommodations for eighteen babies, and clinics are held every morning at 8:30, in charge of Dr. David E. Broderick.

Personal.—Dr. George P. Pipkin was installed as superintendent of the Kansas City General Hospital, July 1; he will also continue in charge of the old City Hospital.——Dr. Lew Chee, Pekin, China, a member of the National Board of Health of China, is visiting Dr. Thomas J. Lynch, St. Joseph.——Dr. F. G. Beard has been appointed police surgeon of St. Joseph.——Dr. George R. Thompson, St. Joseph, has been appointed superintendent of State Hospital No. 2, in that city.——Dr. Clarence W. Russell, Springfield, attempted to leap from an automobile and was run over by the machine, sustaining severe bruises.

St. Louis

Work Begun on Isolation Wards.—Work on the construction of the two wards of the Isolation Hospital, between the city sanatorium and the city infirmary began July 1. The building, furnishing and equipment will cost about $228,000, of which $198,000 is now available. The new wards will accommodate 150 patients and the necessary attendants.

Hospital Staff Appointed.—At the meeting of the City Hospital Board, held June 24, the following appointees were named for the resident staff of the City Hospital: resident internist, Dr. Ralph A. Kinsella; alienist, Dr. John A. Pringle; resident surgeon, Dr. Benjamin W. Klippel, and assistants, Drs. Neil S. Moore, James F. Jolley, William L. Hanson, Floyd A. Burger, James R. Higgins, Ralph McReynolds, William F. Wagenbach, Louis Boonschaft, Thomas S. Fleming, Stephen L. O'Brien, Frank J. Smith and Preston Thompson.——Dr. Earle E. Kneale was appointed resident physician at the Infirmary and Isolation Hospital.

NEW YORK

Guard Against Bubonic Plague.—The Health Department of Yonkers is taking precautionary measures to guard against the introduction of the bubonic plague by the sugar boats which dock at the National and Federal refineries in that city. It is pointed out that the boats are so thoroughly inspected at the port of New York that Yonkers need not place a quarantine on them.

New Members of State Board.—Drs. Melvin J. Stearns, Ogdensburg; Henry B. Minton, Brooklyn; Hans Zinsser, New York City; William G. Bissell, Buffalo, and Ralph H. Williams, D.O., Rochester, were appointed members of the State Board of Medical Examiners by the Board of Regents, June 25.——Dr. William H. Park, New York City, and Dr. Herbert U. Williams, Buffalo, have been appointed by the State Board of Regents members of the medical council.——Dr. Jacob Diner, New York City, has been appointed a member of the State Board of Pharmacists.

New York City

Guild Needs Funds.—St. John's Guild makes an appeal to the public for subscriptions to defray the expenses of the floating hospital, the *Helen C. Juillard*, and the Seaside Hospital, Newdorp, S. I.

To Purchase Land for the Seaview Hospital.—The board of aldermen at its recent meeting passed an ordinance to increase the area of land occupied by the Seaview Hospital by purchase or condemnation to an extent of about 200 acres. It is stated that the space is needed for the present hospital and also to provide a site for future buildings.

Deaths Under Christian Science Treatment.—At an inquest into the death of George W. Robertson who had been attended for two weeks prior to his demise by two Christian Scientists, the jury recommended that the matter be turned over to the district attorney's office as the testimony appeared to indicate that the two women had practiced medicine without a license. A second death has just occurred under similar circumstances.

Street Accidents for June.—The National Highways Protective Society reports that fifty-three persons were killed in the streets of New York in June, twenty-six of these being children. Automobiles and motorcycles head the list as causes of these deaths. Records for the corresponding month last year show that the number of street accidents was forty-two. During the past months there have been 234 persons killed in the streets of the greater city of which 119 were children.

Blackwell's Island Conditions Bad.—The representative of the Prison Reform Association, after an investigation of Blackwell's Island, has submitted a report to the commissioner of corrections stating that the medical staff of Blackwell's Island consists of only one physician and one hospital helper. The hospital itself consists of two ill-furnished wards containing in all twenty-seven beds. It is also pointed out that no examination of the prisoners is made when they enter the prison.

Personal.—Dr. Jokichi Oguri, a Fordham graduate, the first Japanese ambulance surgeon to do service in New York City, has just gone on duty at the Fordham Hospital.——Dr. Simon Flexner, Dr. F. Peyton Rous and Dr. Linsley R. Williams have joined the pellagra commission, composed of physicians from the United States Navy and Army, the Public Health Service and the New York Post-Graduate Medical School at Spartansburg, S. C.——Dr. William L. Bulkley, Dr. Rolfe Kingsley, Dr. and Mrs. Charles H. May, Dr. and Mrs. Edward B. Dench and Dr. John Dwyer have sailed for Europe.——Dr. Graeme M. Hammond has returned from Europe.——Drs. Amy Walker, Helen Palliser and Anna Tjohnlands, graduates of Cornell, have begun their duties as interns at Bellevue Hospital, July 2.——Dr. Geraldine Watson of the same school begins her internship January 1.——Dr. Sigismund S. Goldwater, health commissioner of New York City, has returned from a trip to the West Indies and the Panama Canal.

Medical College Adopts Five-Year Course.—At the meeting of the alumni of the Long Island College Hospital on June 9, it was announced that a five-year course had been adopted and that, as a result, a number of changes had been made in the curriculum of the college. Candidates from high schools possessing a full medical student's certificate will be admitted to the subfreshman class and will study chemistry, biology, physiology, embryology, physics and French or German. The fifth or senior year will be given over to hospital bedside work. The new wing to the Long Island College Hospital will be completed this summer and will provide accommodation for 450 patients; the students will have free access to the building. All the clinical branches will have full-time resident instructors, so that ample opportunities for clinical instruction will be afforded. Dr. Thomas H. Evans has been appointed a full-time assistant in the department of anatomy, histology and embryology.

OHIO

New Officers.—Dayton Medical Society, June 12: president, Dr. Elmer E. Bechtel; secretary-treasurer, Dr. J. Fred Wuist. ——Salem Physicians' Club, June 24: president, Dr. Thomas J. Lyle; secretary, Dr. Ludwig F. Derfus.——Adams County Medical Association at Manchester, June 17: president, Dr. John W. Irwin, Seaman; secretary-treasurer, Dr. Oliver T. Sproull, West Union.

Visitors to State Board of Health.—Dr. Eugene R. Kelley, Seattle, commissioner of health of Washington, and Dr. Samuel J. Croumbine, secretary of the State Board of Health of Kansas, visited the Ohio State Board of Health at its weekly conference in Columbus, June 16. Dr. Kelley delivered an address on "The Fight Against Plague in Washington," outlining plans for the various systems of attacking it and methods by which rats were exterminated.

Diphtheria at Massillon State Hospital.—An outbreak of diphtheria comprising more than thirty cases recently occurred at Massillon State Hospital. A mild form of sore throat first prevailed and this was followed by a sharp outbreak of diphtheria among the inmates and attendants of the hospital. The outbreak was traced by Drs. Frank G. Boudreau and Walter E. Obetez, of the State Board of Health, to infection of the milk-supply, and immediate steps were taken to safeguard the supply by taking cultures from the throats of all who handled the milk and pasteurizing the entire supply. Four deaths occurred. Dr. Henry C. Eyman, superintendent of the hospital, placed all patients and suspects in one building, secured the immunization of all attendants and nurses, and placed Dr. Paul J. Alspaugh, senior resident physician, in charge, relieving him of all other duties. The outbreak is now believed to be under control.

Typhoid Fever at Canal Dover.—A peculiar epidemic of typhoid fever recently occurred at Canal Dover. This city experienced a similar outbreak in 1910, comprising nearly a hundred cases and traceable to one milk route. The same milk route was implicated in the present outbreak, more than 90 per cent. of the forty-one cases being restricted to customers of this dairy. Dr. A. W. Davis, the health officer, and Dr. F. G. Boudreau of the State Board of Health made a searching investigation but were unable to discover any evidence of carriers in the family of this dairyman. This milk-supply was temporarily stopped and arrangements made for pasteurizing the milk under the supervision of the health officer. This outbreak illustrates the danger of distributing milk in bulk, as contamination frequently results therefrom. All milk sold in Canal Dover hereafter will be distributed in bottles which are properly sterilized.

Personal.—Dr. Will J. Prince, Piqua, was operated on for appendicitis at the Memorial Hospital, June 25.——Dr. Simon Morgenroth has been elected a member of the staff of the Akron General Hospital. Dr. Clarence Ordway, of the East Side Hospital, Toledo, has purchased property adjoining the hospital, on which he expects to erect an addition to the institution.——Dr. Chester E. Kinzel, Wilmington, has been elected coroner of Clinton County to fill the unexpired term of Dr. Frank A. Peelee, resigned.——Dr. Martin Stamm, Fremont, and Dr. and Mrs. Charles M. Harpster and daughter, Toledo, have sailed for Europe.——Dr. Walter B. Turner, Youngstown, has been appointed local surgeon of the Baltimore and Ohio system.——Dr. George J. Smith, Niles, had conferred on him the honorary degree of M.A. at the commencement exercises of the University of Pittsburgh, Pa., June 17.——Dr. Daniel C. Houser, Dr. Colin R. Clark and Dr. James A. Sherbondy, Youngstown, have sailed for Europe.——Dr. Horace Bonner, Dayton, was the guest of honor at a dinner given by the sisters of St. Elizabeth Hospital to the medical staff of that institution in honor of the completion of his first quarter-century as a member of the staff.

Cincinnati

Alumni Meet.—The Ohio-Miami Alumnal Association elected the following officers for the ensuing year: president, Dr. Arthur C. Bachmeyer, Cincinnati; vice-presidents, Drs. Lockhart Nelson, Hillsboro, Ohio, John E. Wilson, Butler, Ky., Allen L. Bramkamp, Richmond, Ind., and Merrick T. McCarty, Cincinnati; secretary, Dr. Martin H. Urner, Cincinnati, Dr. Charles Stammel, Jr., Cincinnati.

City Physicians Instead of Fire Surgeons.—The city solicitor has prepared an ordinance which abolishes the position of fire surgeon and creates the post of city physician. It provides for the appointment of a chief city physician with a salary of $2,500; and for a city physician with a salary of $2,000 a year. Under the new arrangement the appointees will be under the direct supervision of the director of public safety, and will make examinations of the fire and police departments.

PENNSYLVANIA

Gift to Hospital.—The Abington Memorial Hospital has been given a $6,000 automobile ambulance by George D. Widener.

University of Pennsylvania to Admit Women.—It is reported that the trustees of the University of Pennsylvania have voted to admit women to the medical college of the university, beginning in the fall of 1914.

Antitoxin Stations.—In preparation for the Fourth of July accidents, Dr. Samuel G. Dixon, State Commissioner of Health, established sixty-nine lock jaw antitoxin stations throughout the state, where antitoxin was furnished to the poor without charge and these were so placed that every part of the state was within easy reach of one.

Hospital Chiefs Named.—On June 30 Dr. Harte, director of Public Health and Charities, made provisional appointments to positions at the Philadelphia General Hospital by naming Dr. Joseph C. Doane as chief resident physician to succeed Dr. Henry Sykes, deceased, and Dr. J. L. Donohue as assistant physician under Chief Physician Jackson, of the Hospital for the Insane.

Personal.—Drs. William H. Irwin and Haven Shoemaker have sailed for Europe.——Dr. William H. Walsh, superintendent and chief medical officer of the Municipal Hospital for Contagious Diseases, has been appointed medical administrator of the new Children's Hospital, which is now being erected at Eighteenth and Fitzwater streets.——Thomas S. Gates, president of the Philadelphia Trust, Safe Deposit and Insurance Company, has been elected president of the Board of Managers of the University Hospital to succeed John Sailer, deceased.——Dr. Frank R. Starkey was fired on by his intoxicated colored butler, June 30, but fortunately was not injured. ——Dr. William L. Rodman, President-Elect of the American Medical Association, was one of the guests of honor at a reception given by the Medical Club of Philadelphia, June 26.

WISCONSIN

Fresh-Air Camp Opened.—The municipal open-air camp of Neenah, at Gillingham's Corners, was opened June 17 with six children. The camp has a capacity of twelve, and will be conducted for ten weeks.

Personal.—Dr. and Mrs. Richard C. Buchanan, Green Bay, and Dr. James P. Lenfesty, De Pere, have returned from Europe.——Dr. and Mrs. Victor F. Marshall, Appleton, sailed for Europe, June 27.——Dr. William F. Lorenz of the staff of the Wisconsin State Hospital, Mendota, who has been on leave of absence for six months, to investigate pellagra in the South for the United States Public Health Service, has been granted an additional two months' leave to continue the work.——Dr. John J. McShane has been reelected health commissioner of Kenosha.——Dr. Charles A. Wright, Delavan, sailed for Europe, June 26.

GENERAL

The Service of Medicine to Civilization.—We have received a large number of letters commendatory of the address of President Vaughan, published in The Journal, June 27, and two or three have suggested that it is just the kind of matter to put into the hands of influential laymen. The address certainly will be of interest to the thinking layman, and undoubtedly many of our readers would like to present a copy to some of their friends or patients. We have had reprints made and shall be glad to furnish them on receipt of stamped addressed envelope, so long as the supply lasts.

Leper Colony.—The gift of $25,000 by the late Lord Strathcona is to be used for the establishment of the first leper colony in the United Kingdom. It is soon to be established in a deserted part of Essex. There are now only about twenty lepers in Great Britain, and these will be brought together for care at a central colony. A specially equipped hospital will be provided.

New Officers for Academy.—The American Academy of Medicine, at its annual meeting in Atlantic City, June 20-22, elected the following officers: president, Dr. Woods Hutchinson, New York City; secretary-treasurer, Dr. Charles McIntire, Easton, Pa. (reelected); and assistant secretary, Dr. William L. Estes, South Bethlehem, Pa. San Francisco was selected as the next place of meeting.

Climatologists Change Name.—At the thirty-first annual meeting of the American Climatological Association, held in Atlantic City, it was decided to change the name of the organization to the American Climatological and Clinical Association, and to hold the next meeting in San Francisco. Dr. Henry Sewell, Denver, was elected president, and Dr. Guy Hinsdale, Hot Springs, Va., was reelected secretary-treasurer.

Bequests and Donations.—The following bequests and donations have recently been announced:

Michael Reese Hospital, Chicago, a donation of $10,000 for the endowment of two beds in the children's ward, one in memory of Maurice Selz; the other in memory of Soloman and Miss Celia Austrian.

Children's Memorial Hospital, Montreal, $25,000, for the building of a wing in memory of the late Roswell Cross Lyman. Montreal General Hospital, $3,000; Royal Victoria Hospital, $3,000; Protestant Hospital for the Insane, Montreal, $3,000; Montreal Anti-Tuberculosis League, $1,000; and Grace Dart Home, $2,000, by the will of the late Henry Lyman, a victim of the *Empress of Ireland* disaster.

Lynn, Mass., Hospital, $10,000, by the will of Luther S. Johnson, Lynn.

New York Hospital, New York City, $10,000; Isabella McCosh Infirmary, Princeton, N. J., $5,000, by the will of Dr. Frank Hartley.

Lighthouse for the Blind, New York City, an endowment fund of $300,000, as a result of a four months' campaign.

Gift to Johns Hopkins.—Delivery was made July 6 at Baltimore of securities valued at $1,500,000 presented by the General Education Board to the Medical School of Johns Hopkins University, to be known as the William H. Welch Endowment for Clinical Education and Research. The entire income from this fund is to be utilized for the support of full-time teaching and research departments of medicine, surgery and pediatrics, or diseases of children. The trustees have provided that in reorganizing these three departments, professors and their assistants should hold their posts as salaried university officials, and accept personally no fees whatever for any medical or surgical services which they might render. The hospital wards and out-patient departments are to be under the control of the university medical or surgical teachers, but the teachers are to be free to render any service required in the interest of humanity and science. They are to be free to see any patient they desire. Private patients, however, will pay a reasonable fee to the university, rather than to the professors personally. Simultaneously with the completion of the reorganization of the Johns Hopkins Medical School, in accordance with this new plan, the university trustees have chosen Dr. Theodore C. Janeway, hitherto professor of medicine at Columbia University, to become professor of medicine of the Johns Hopkins Medical School. The chair of surgery at Johns Hopkins, under the full-time arrangement, is to be occupied by Dr. William S. Halsted, most of whose surgical career has been passed in the Johns Hopkins Medical School, where, since the establishment of the Johns Hopkins Hospital, he has been its surgeon-in-chief and professor of surgery. The chair of pediatrics will be occupied by Dr. John Howland, who was called a year ago from the professorship of pediatrics at Washington University, St. Louis, and appointed physician in charge of the Harriet Lane Home for Invalid Children, this institution being the pediatric clinic of Johns Hopkins Medical School. Johns Hopkins will become the first medical school to be placed on the full-time basis in all departments. A grant of $750,000 has been made to Washington University, St. Louis, and of $500,000 to the Medical School of Yale University, on an understanding that they also reorganize their work so as to put their clinical teaching on a full-time basis.

The Plague Situation.—A telegram under date of July 7, from New Orleans, states that up to date three cases of bubonic plague have occurred, with two deaths. The last case was discovered July 2. This focus of infection was three miles from the first. In the infected zone of the city, 6,000 rat-traps have been placed by direction of the health authorities. The infected area, with the Industrial Home of the Volunteers of America as a center, is under strict observation; and the trapping operations are being pushed to the limit of the area of rodent infection. Twenty-seven inmates of the Industrial Home of the Volunteers of America, where the two patients afflicted with plague were living when stricken, have been placed in an isolation camp, where they will remain until all danger is past. Plans have been made for the construction of a concrete barrier around the infected zone, extending four blocks from the center in all directions, and having four rat drives leading toward the center. Other barriers will be erected as the campaign progresses, with the ultimate idea of the extermination of every rat in the infected district. On July 7 the Public Health Service took control of the situation and established headquarters at 163 Dryades Street. All points outside the city are being thoroughly protected by rigid enforcement of outgoing quarantine. The officers of the Public Health Service on duty are: Assistant Surgeon-General William Colby Rucker, in charge; Surgeons Gustave M. Corput and Richard H. Creel, executive officers; Past Assistant Surgeon Friench Simpson and Assistant Surgeon Charles L. Williams, bacteriologist. Thirty inspectors, twenty foremen and one hundred laborers are already at work. Dr. Oscar Dowling, president of the State Board of Health; Dr. William P. O'Reilly, city health officer, and a committee of representative citizens are cooperating with the service officials to the fullest extent. Twelve lay inspectors from San Francisco, who are expert rat catchers, are on their way to New Orleans.——The embargo on the down-town district was lifted June 30, on advice from Surgeon-General Blue, so that normal business conditions now prevail in the forty-nine blocks of the business district, which have been under quarantine since the first case of bubonic plague was reported.

The Illinois State Board of Health has instructed its health officers along the Mississippi, Ohio, Wabash and Illinois rivers to begin the extermination of rats, and the railways entering the state from the South have been asked to lend their aid toward the exclusion of plague-bearing rats. ——The acting health commissioner of St. Louis, Dr. G. A. Jordan, has instructed the police to start an investigation regarding the rat question along the river front of that city. ——Dr. J. A. B. Adcock, secretary of the Missouri State Board of Health, has instructed all Missouri towns along the river front to begin a crusade against rats.——Memphis has adopted the necessary precautionary measures against the introduction of plague-infected rats.——Galveston has instituted a strict quarantine against the port of New Orleans, has planned a quarantine against the port of Santiago de Cuba, and has outlined plans for a determined campaign against rats, and for the destruction of their breeding places. The city of Galveston will pay 8 cents for each rat delivered to its health officers at the City Hall.——The quarantine board of Norfolk, Va., has recommended quarantine on vessels coming from New Orleans.——Dr. Eugene F. McCampbell, secretary of the Ohio State Board of Health, has notified the health officers of Cincinnati, Ironton, Portsmouth, Pomeroy, Middleport, Marietta, Bellaire, Bridgeport and Steubenville to guard carefully the landing of cargoes from Ohio River steamers, and to prevent rats from coming ashore. He has also dispatched state health inspectors, S. G. Boudreau and W. E. Obetz to make a trip of the river ports and see that instructions are rigidly enforced. He has also ordered that rat guards be placed on all ropes and hawsers from river vessels, and that watchmen be stationed at all gang-planks. He favors a state-wide campaign of extermination of rats.——At a meeting of the Kentucky State Board of Health, held in Louisville, June 29, a resolution was adopted authorizing Dr. John G. South to investigate the situation in New Orleans.——Dr. Charles A. Mohr, health officer of Mobile, has been delegated by Dr. W. H. Sanders, state health officer of Alabama, to represent the state and to render assistance in measures for the prevention of the spread of bubonic plague along the gulf coast. Vessels from New Orleans and other infected ports will not be allowed to dock without placing rat guards on all hawsers and taking all other precautions to prevent rats from coming ashore.

CANADA

New Officers.—Moose Jaw Medical Society: president, Dr. George P. Bawden; secretary-treasurer, Dr. Charles G. Sutherland.

Tuberculosis in Ontario.—In June only 95 cases of tuberculosis were reported to the Ontario Board of Health from that province. There were 143 for the same month in 1913. The board claims that physicians are not reporting these cases as required by the public-health act. The cases of infectious diseases in June totaled 1,503, with 89 deaths, as against 1,566 and 154 deaths for the corresponding month of 1913.

Personal.—Dr. John Hunter, Toronto, has gone abroad.——Dr. David Tannenbaum, Montreal, is summering in the Catskills.——Dr. Charles J. Patton, Montreal, is spending two months in Pennsylvania.——Dr. Walter Walker Wright, Toronto, will spend several months in the hospitals of Europe.——Dr. John T. Finnie, Montreal, has gone to England and the Continent.——Dr. Louis deL. Harwood, Montreal, has returned from Paris, much improved, after a serious operation.——Dr. Walter A. Wilkins, Montreal, is spending the summer in Germany.

LONDON LETTER

London, June 19, 1914.

Royal Commission on Venereal Diseases

At the fortieth meeting of the Royal Commission on Venereal Diseases, evidence was given by Dr. Dubois Havenith of Brussels, who was secretary to the international congresses of 1899 and 1902 dealing with venereal diseases. He said that in the case of syphilis, disinfection, by which he meant the getting rid of contagious lesions and the sterilizing of contaminated objects, was essential. In effect, disinfection in the case of syphilis consisted in treatment. Dr. Havenith laid stress on the need for early diagnosis, free and readily accessible treatment and supervision of the treatment for such time as might be necessary. For the purpose of early diagnosis, laboratories should be provided in which bacteriologic and other tests could be carried out. Clinics should be open after the ordinary hours of labor. In order that patients, who were often negligent or ill-instructed, should not abandon their treatment it was desirable to introduce some measure of control or surveillance. Such a system was already in operation at the dispensary founded by Malvoz at Liége, where arrangements had been made, with the consent of the patients, for keeping in touch with them, for the purpose of giving advice, for submitting them to the investigations necessary to determine the permanence of the cure, for warning them against contracting marriage too early, etc. The scheme worked well, and the patients were willing to fall in with the arrangements. The public should be enlightened on the gravity of syphilis from both the individual and the public point of view, but it was equally important that it should be realized that syphilis was a curable disease, that as a rule it was avoidable, and that if properly treated it ceased to be contagious.

The Problem of Clean Milk

Though the problem of a clean milk-supply has been discussed for many years by health officers and others, and some regulation attempted by the government, it still remains unsolved. Dr. Kenwood, Chadwick Professor of Hygiene and Public Health in the University of London, in a lecture on the subject at the Royal Sanitary Institute, said that there was overwhelming evidence that milk was one of the dirtiest articles of food sold. While the risk of the spread of tuberculosis through milk was considerable and called for further safeguards, the most urgent public health need was a cleaner milk-supply; for the bacteria and dirt in raw milk were doubtless responsible for much sickness and mortality among infants, especially in the summer months. The real solution of the problem was to produce a class of workers trained in the production of clean milk, and a general public with an educated concern to demand clean milk. The effective weapons were to educate, train, advise and supervise, and a great many inspector-instructors would have to be appointed if anything of value were to accrue to that branch of the work. The futile regulations of the Local Government Board made under the Dairies, Cowsheds and Milkshops Order, should be replaced by clearly defined conditions for the sanitary collection and distribution of milk, and for the circumstances which should determine the granting of an annual licensing. The time had gone by when without any knowledge or previous training, any one should be permitted to embark on this industry. Until the government seriously undertook to provide sufficient legal powers and an efficient machinery for administrative purposes, the heating of milk (low-temperature pasteurization) represented the only safe provisional solution of the milk problem.

Security of Tenure of Health Officers

Mr. Lloyd-George, Chancellor of the Exchequer, has received a deputation of the British Medical Association, the Society of Medical Officers of Health, the National Housing and Town-Planning Council, the Mansion House Council, the Rural Housing and the Sanitation Council, and the Royal Institute of Public Health on the subject of the security and tenure, and the superannuation of health officers. Among the points argued were that the health officers were practically under the direction of persons whose defects they very often had to point out, that superannuation should be given at the age limit, that they were liable to dismissal at three months' notice, that in one instance a health officer had been asked by his council to rewrite a portion of his report, and that it was impossible for health officers to be as fearless in the interests of the public good as they should be.

Replying, Mr. Lloyd-George said that the speeches represented a case that only had to be stated to carry conviction to fair and impartial minds. The powers entrusted to local authorities even at the present moment were enormous. He should like to see some of these powers considerably strengthened, but he was convinced that until greater independence was insured for the officers who would administer those provisions, it was idle for Parliament to waste time in carrying more acts. Security of tenure to health officers and inspectors must be an essential part, if not an essential preliminary to any further legislation dealing with the housing question. He had had letters from health officers saying that they dared not report the true facts, and that the reports sent to the Local Government Board did not represent a tenth of the facts in their areas. Therefore he was wholeheartedly in sympathy with the demand, and the government had felt that there ought to be specific grants for a substantial part of the salaries of the officers concerned, and that they should be in a position to demand from the local authorities greater security of tenure.

The London School of Tropical Medicine

Portraits in bronze relief of Mr. Joseph Chamberlain and his son Mr. Austen Chamberlain have been placed in the hospital connected with the London School of Tropical Medicine as a memorial to the work which they have done in establishing the school. In unveiling the portraits Mr. Lewis Harcourt, Colonial Secretary, traced the development of the school to the conception and foresight of Sir Patrick Manson. The number of students attending the courses had grown from seventy in the first year to nearly 200 in the last, and nearly 1,800 passed through the school, about 700 of whom had entered colonial service. Only those like himself who had the vital statistics of the colonial service before their eyes could appreciate what these men had done to diminish the dangers of tropical life. The West African coast, once regarded as a death-trap, now might be esteemed a sanatorium. The death-rate of British officers had been reduced from 28 to 8 per thousand, and the invaliding from 62 to 28.

Increase in the Sale of Nostrums

Last year in his budget statement, Mr. Lloyd-George stated that there had been a decline in the revenue derived from stamps which have to be affixed to nostrums. This, as stated in The Journal, he attributed to two causes: the insurance act, which provided free attendance and medicine for the whole industrial population, and the revelations made at the government committee of inquiry into nostrums. The figures for the present year show an increase. The receipts from the sale of medicine duty stamps amounted to $1,800,000, or $160,000 more than in the twelve months 1912-1913. This is the greatest advance in any one year, for the last fifteen years at least. The increase in 1912-1913 was only $2,300. Last year also witnessed a small rise in the number of the licenses, 43,156 being issued, against 43,118 in 1912-1913.

PARIS LETTER

Paris, June 19, 1914.

Third Meeting of Interns

The third Congrès de l'internat des hôpitaux des villes de Facultés was held at Lyons, May 29 to June 2, under the presidency of Dr. Hugounenq, dean of the Faculté de médecine de Lyon.

The question of foreigners' internship and the practice of medicine in France was discussed. It was decided the present state of affairs might continue, which admits foreigners to internship on the same terms as French students, but allows the practice of medicine only on two conditions: the possession of a government diploma with a French bachelor's degree, and naturalization.

Cases in which the intern has been a victim of an infection or wound because of his service are numerous: wounds infected in the course of an operation or necropsy, infections or sicknesses of many kinds (typhoid fever, diphtheria, scarlatina, syphilis, etc.). Interns, however, may not benefit by the law of 1898 concerning occupational accidents, having no salaries, and not being in the position of workers in industrial establishments. Beside the facilities which are accorded them by the hospital administration to receive necessary care and the honorary distinctions which are sometimes conferred on them, the assembly thought it would be desirable if a compensation might be provided for the temporary and sometimes chronic disability which results from these professional accidents. It was unanimously decided to ask the administrations concerned for insurance against the professional risks to which interns are exposed in their hospital service.

Finally, it was voted to have the Associations amicales d'internes des hôpitaux des grandes villes de Facultés make the declaration of association prescribed by the law of 1901, so that the title of "hospital interns" and the legal power to protect the title against usurpers might be assured.

Homage to Military Physicians

At the opening of the session of the Académie de médecine, June 2, Raphael Blanchard, the secretary, read a list of physicians who had died in Morocco since the beginning of the present campaign. This list, prepared and sent by the sanitary service of the army, shows that in three years nine military physicians have died in Morocco—one from amebic dysentery, three from typhoid fever, two from exanthematous typhus and three under fire. Military physicians, Blanchard said, are non-combatants, and advantage is taken of this fact to limit their privileges and honors. But aside from the fact that the deaths which result from the care given to sick soldiers are sufficiently glorious, statistics show that the enemy's balls strike physicians as well as combatants, because their devotion forces them out on the firing-line to recover or to care for the wounded. The academy entered fully into the solemn homage which the orator rendered to these dead men.

In the name of the military health services, Vaillard, director of the Ecole d'application de médecine et de pharmacie militaires du Val-du-Grâce, feelingly thanked Blanchard and the academy for their manifestation of sympathy toward these victims of duty.

The Gastralgic Variety of Pyloric Stenosis

At the session of the Académie de médecine of June 16, Dr. Enriquez, physician to the hospitals of Paris, introduced a particular variety of pyloric stenosis, characterized essentially by the late painful paroxysm, to the exclusion of every other symptom. The lesions ascertained, sometimes neoplasms and sometimes ulcers, are situated at the level of the pylorus itself, at a distance, on the lesser curvature, or toward the duodenum. The clinical picture varies according as the stomach, examined on the roentgenoscopic screen, is of the hypertonic or atonic type. In the former case, the paroxysms are much more violent; the dilatation of the organ, always relative, seldom occurs, and is at times even exclusively segmentary, localized in the prepyloric antrum. In the hypotonic type, often accompanied in women by ptosis, the late pains are attenuated. The progress of the symptoms is essentially intermittent. Diagnosis is generally very difficult; but dechloridation followed very strictly for five or six weeks, thus reducing the secretion of hydrochloric acid to normal, will entirely eliminate the late pain in cases in which the hyperchlorhydria is of purely nervous origin, without organic lesion. For the rest, the use of a pneumatic cushion, more or less inflated, as the case may demand, rapidly improves the ptosis, whether simple or accompanied by other lesions. If this double therapeutic test is not efficacious, it reveals indirectly the existence of an organic lesion, whose location and nature repeated roentgenoscopy will determine. If the pain persists and the gastric distention increases, particularly if accompanied by alteration of the general condition, there is sufficient argument for surgical intervention, preferably pylorectomy, but if not practicable, gastro-enterostomy with complete exclusion of the pylorus.

Standardization of the Size of Medical Publications

The practitioner who desires to file methodically the numerous publications which he receives, in order to consult them when occasion arises, finds himself facing many difficulties, the greatest of which is the lack of uniformity in the dimensions of these publications. The result is a heap of diverse pamphlets of different sizes and bindings, merely a confused bundle, as hard to file as to consult. In mentioning these inconveniences in the *Gazette des hôpitaux*, Dr. P. Louge, surgeon of the hospitals of Marseilles, proposes the adoption of a standard form to facilitate the classification and preservation of these medical publications. The most convenient dimensions would be 15 by 23 cm. (6 by 9 inches). A class heading should be placed on the upper margin, and bear at the right the important word of the pamphlet's title, and on the left the capital letter of this word. The left margin should be left entirely blank for the rebinding, etc.

BERLIN LETTER

BERLIN, June 19, 1914.

Personal

A few days ago Kehrer, formerly director of the obstetric clinic at Heidelberg, died at the age of 77. At the beginning of his university work, he devoted himself to physiology and was first privat-docent in this department at Giessen and later professor of obstetrics at Giessen and then at Heidelberg in 1881. He published a series of scientific monographs in the field of gynecology in general, a text-book on operative obstetrics and a text-book on obstetrics for midwives.

Reduction of Infant Mortality

According to the Imperial Statistical Bureau, the infant death-rate has never been so small in Germany as in 1912. The percentage of deaths to those born living in 1912 was 14.7 as compared with an average for the last ten years of 18.5. The rate varies much in different parts of the empire, ranging from 17.7 in Bavaria to 10 in Hesse and only 6.6 in Waldeck. The relatively greater mortality of male children in the first year of life is notable. Illegitimate children also show a higher death-rate, although in this case also there was marked improvement in 1912. The wide-spread assumption that the mortality of illegitimate children is markedly greater in large cities, especially in Berlin, is not sustained.

Accidents to Radium

This refers not to injuries to patients by radium, but accidents which have happened to the radium itself in its application. The newspapers reported the loss of a tube of radium worth $5,000 (20,000 marks) in a sanatorium in Charlottenburg. The tube was borrowed by the management of the sanatorium for the treatment of a patient. After its use it was laid in a small dish and later was thrown into the sink by a nurse who did not know the importance of the costly article. Although the Charlottenburg water-works were immediately notified and several of the connected canals of Charlottenburg were searched by workmen and three machines in the pumping-station removed and thoroughly searched, the radium was not found. The management of the sanatorium has now the doubtful pleasure of paying not only for the radium which was borrowed but also for the searching of the Charlottenburg water-system.

The other two accidents of a similar character turned out more fortunately. In a Munich hospital, in some unexplained way, a tube filled with radium valued at about $5,750 (23,000 marks) was thrown into the garbage and collected by the garbage-wagon. Notice was immediately given to the station for sorting the garbage at Puckheim near Munich and luckily the tube was found.

In a Strassburg deaconess' home, a patient had the misfortune to swallow a radium tube worth $6,250 (25,000 marks). The radium had been fastened inside the mouth and was to remain there for seventy-two hours. The fear that the radium might produce some disturbance inside the body was not justified. It was possible by the immediate administration of a powerful cathartic to free the patient from the foreign body. These experiences are, at any rate, a warning to be careful in the handling and preservation of the costly metal.

An Official Opinion on Friedmann's Remedy

June 15 there was a consultation in the medical division of the Prussian Department of the Interior on the value of Friedmann's remedy for tuberculosis, at which the ministerial director, Kirchner, presided and a number of clinicians, pathologists and bacteriologists participated. At this conference there was unanimity of opinion that there had been no pronounced curative action of the remedy either in cases of pulmonary or in other forms of tuberculosis. On the other hand, direct injuries from the use of the remedy had been established which depended in part on the action of the remedy itself and in part were to be explained by the fact that it was sometimes introduced into commerce contaminated with foreign bacteria. These experiences have led a number of prominent clinicians to refrain from the employment of Friedmann's remedy. An order forbidding its use is not to be issued because any limitation of the physician in the choice of his methods of treatment is foreign to German jurisprudence. It must be left to the scientific testing by the individual physician to determine whether and in what cases he will further use the remedy. The measures that the medical authorities have taken and still have in prospect in order to prevent the remedy from coming on the market in a contaminated condition received the approval of the meeting.

Marriages

John E. Hastings, M.D., Bernalillo, N. Mex., to Mrs. Mary S. Stickney of Washington, D. C., at Las Vegas, N. Mex., June 10.

Irwin Bradfield Smock, M.D., Canton, Ohio, to Miss Elizabeth Marvel Hutton of Atlantic City, N. J., June 24.

John Howard Nesbitt, M.D., Honey Grove, Texas, to Irene Thornton, M.D., of Atlanta, Ga., June 1.

Walter Martin Bucher, M.D., Warrensville, Ohio, to Miss Rena Richards of Toledo, Ohio, June 24.

Harry Leonard Merscher, M.D., Philadelphia, to Miss Elsie C. Hoffmann of Toronto, Ont., June 24.

Emmet Field Horine, M.D., to Miss Helen Brittingham Ruthenberg, both of Louisville, Ky., June 30.

Arthur Purdy Stout, M.D., New York City, to Miss Jean Stoddart of Toronto, Ont., in Paris, June 23.

J. Emmett Clark, M.D., to Miss Alice Louise Tennis, both of Oakland, Cal., at San Jose, Cal., June 20.

Edward Rosseter Mugrave, M.D., Denver, to Miss Leah M. Troutman of Fort Collins, Colo., June 24.

Charles H. Humphreys, M.D., Dayton, Ohio, to Miss Mary E. O. Sykes of Cincinnati, June 22.

Thomas Francis Nevins, M.D., to Miss Catherine E. Smith, both of Brooklyn, N. Y., June 24.

John Albert Chenoweth, M.D., Akron, Ohio, to Miss Ethel Ball of Webb City, Mo., June 22.

Harry V. Kitzmiller, M.D., to Miss Edna Bales, both of Wray, Colo., at Pueblo, Colo., June 13.

Paul Baldwin, M.D., Kennett, Mo., to Miss Elizabeth Brasfield of Unionville, Mo., June 17.

Francis Pierce Silva, M.D., to Miss Anna Louise Sullivan, both of Charlestown, Boston, June 24.

Nelius Julian Nessa, M.D., to Miss Florence Bankson, both of Sioux Falls, S. Dak., June 24.

Joseph L. Rose, M.D., to Miss Belle Netzer, both of Lena, Wis., at Green Bay, Wis., June 23.

Giles Anthony De Courcy, M.D., to Miss Martha Suddeck, both of Cincinnati, June 20.

David Henry Wherritt, M.D., Chicago, to Miss Elizabeth Griffith of New Orleans, June 23.

Fred H. Powers, M.D., to Miss Cora Sprecher, both of Baraboo, Wis., June 24.

Morris Fishbein, M.D., Chicago, to Miss Anna Mantel of Indianapolis, July 7.

Drexel Lowry Dawson, M.D., to Miss Lula Sinclair, both of Chicago, recently.

Deaths

Jeremiah Clark Stewart, M.D. College of Physicians and Surgeons in the City of New York, 1884; a Fellow of the American Medical Association; and Western Surgical and Gynecological Association; professor of principles of surgery and associate professor of surgery in the University of Minnesota, Minneapolis; surgeon to the Minneapolis City Hospital, and consulting surgeon to the Northwestern and Asbury hospitals, Minneapolis; died at his home in Minneapolis, June 25, from heart disease, aged 60.

Frank Martin Cunningham, M.D. Medical College of Virginia, Richmond, 1899; a member of the Medical Association of Georgia; and formerly president of the Macon Medical Society; and a specialist in diseases of the eye, ear, nose and throat of Macon, Ga.; consulting surgeon to the eye, ear, nose and throat department of the Macon City Hospital, and sometime department editor of *Southern Medicine and Surgery*; died in the University Hospital, Philadelphia, June 21, from pernicious anemia, aged 37.

William B. Moseley, M.D. University of Virginia, Charlottesville, 1890; of Brooklyn, N. Y.; a member of the American Medico-Psychological Society; an alienist to the Kings County Hospital and in charge of the observation ward since 1903; died suddenly in that institution, June 25, from heat prostration, aged 45.

George Strawbridge, M.D. University of Pennsylvania, Philadelphia, 1866; a Fellow of the American Medical Association; and of many American and German ophthalmologic and otologic societies; formerly professor of otology in his Alma Mater; ophthalmic surgeon to the Presbyterian Hospital and Pennsylvania Eye and Ear Infirmary, and consulting surgeon to the Wills Hospital, Philadelphia; died at his home in Philadelphia, June 29, aged 68.

Caleb Scattergood Middleton, M.D. Homeopathic Medical College of Pennsylvania, Philadelphia, 1862; formerly a member of the State Board of Medical Examiners of Pennsylvania; a trustee and director of the Hahnemann College and Hospital; for fifty years a practitioner of Philadelphia; died at his suburban home in Ardmore, Pa., June 24, aged 75.

Giles Eldon French, M.D. University of Oregon, Portland, 1899; a medical officer of the United States Reclamation Service; with headquarters at North Yakima, Wash.; but who had been on duty at the reclamation camp, Clear Creek, Wash.; died suddenly, June 22, from heart disease, aged 42.

James Hamilton Morgan, M.D. Jefferson Medical College, 1889; one of the founders of the Physicians and Surgeons Hospital, Wilmington, Del., and for two years instructor in science in Wilmington High School; died at his home in Wilmington, June 17, from cerebral hemorrhage, aged 56.

James Bryan Whitfield, M.D. University of Pennsylvania, Philadelphia, 1867; a Fellow of the American Medical Association, and once president of the Marengo County, Ala., Medical Society; a Confederate veteran; died at his home in Demopolis, Ala., June 19, aged 72.

Marvin Reed Palmer, M.D. College of Physicians and Surgeons in the City of New York, 1882; since 1895 chief surgeon of the police department of New York City; died at the Lloyd Sanitarium, New York City, five days after an operation for appendicitis, aged 54.

James B. Geyer, M.D. Medical College of Indiana, Indianapolis, 1882; a Fellow of the Ohio State Medical Association; for sixteen years a member of the school board of Sidney, Ohio; died at his home in that city, June 18, from carcinoma of the stomach, aged 66.

John William Gallaher, M.D. Washington University, St. Louis, 1878; a Fellow of the American Medical Association; for many years a practitioner of Graham, Texas; but for two months a resident of Fort Worth; died at his home in Fort Worth, June 20, aged 62.

John Richard Devine, M.D. Albany, N. Y., Medical College, 1910; a Fellow of the American Medical Association; and formerly a member of the staff of the Samaritan Hospital, Troy, N. Y.; died at his home in Utica, N. Y., March 4, from pneumonia, aged 27.

Edwin Darling (license, Iowa, years of practice, 1886). For forty-four years a practitioner of Crawford County, Iowa; and hospital steward during the Civil War; for one term postmaster of Vail, Iowa; died at his home in that place, June 20, aged 76.

George O. Murray, M.D. College of Physicians and Surgeons, Keokuk, Iowa, 1896; a member of the Wisconsin State Medical Society; for several years health officer of Tomah; died at his home in that city, June 20, from cerebral hemorrhage, aged 56.

Paul Sherman, M.D. St. Louis College of Physicians and Surgeons, 1898; a Fellow of the American Medical Association; and an inspector for the Illinois State Board of Health; died at his home in Shawneetown, Ill., June 19, from nephritis, aged 38.

James Howell Wilkes, M.D. University of Nashville, Tenn., 1862; a member of the Tennessee State Medical Association; assistant surgeon in the Confederate service during the Civil War; died at his home in Columbia, Tenn., June 20, aged 83.

Charles T. Palmer, M.D. Medico-Chirurgical College of Philadelphia, 1904; a Fellow of the American Medical Association; deputy health officer of Los Angeles; died in that city, June 15, from general nervous breakdown, aged 33.

William H. Kessler, M.D. Cincinnati College of Medicine and Surgery, 1869; a retired physician of West Miltos, Ohio; died at his home, June 24, from heart disease, aged 75.

Charles Julius Funck, M.D. Medical College of Ohio, Cincinnati, 1878; was found dead in his home in Cincinnati, June 24, from heat exhaustion, aged 58.

Albert S. Clarke, M.D. New York University, New York City, 1848; died at his home in Bushnell, Ill., May 13, from senile debility, aged 90.

John Ambert Greer, M.D. University of Pennsylvania, Philadelphia, 1887; of Audubon, N. J., and Philadelphia; died in the Presbyterian Hospital, Philadelphia, April 18, from the effects of an overdose of laudanum, aged 47.

James Ewell Bell, M.D. Hampton-Sidney, Va., Medical College, 1849; for more than sixty years a practitioner of Virginia; died at the home of his daughter in Wilmington, N. C., May 27, from senile debility, aged 90.

George C. Soule (license, Rhode Island State Board of Health, 1895); for thirty-six years a practitioner of Wickford, R. I., and vicinity; died at the home of his daughter in Wickford, June 22, from nephritis, aged 60.

Otto Chester Joselyn, M.D. Detroit Medical College, 1893; whose license was revoked by the California State Board in 1905; died in the Lane Hospital, San Francisco, June 14, after an operation for appendicitis, aged 47.

Arthur Hurtado De Mendoza, M.D. Dearborn Medical College, Chicago, 1905; of Piper City, Ill.; died suddenly from cerebral hemorrhage while making a professional call near La Hogue, Ill., June 12, aged 50.

John E. Binns, M.D. University of Nashville, Tenn., 1861; a confederate veteran; for four years tax assessor of Davidson County, Tenn.; died at his home in Nashville, May 1, from senile debility, aged 75.

James L. Hogeboom (license, examination, New York). A practitioner since 1864; and for thirty-five years a resident of Castleton, N. Y.; died in New York City, June 2, from senile debility, aged 84.

Benjamin Franklin Harvey, M.D. New York University, New York City, 1880; a pioneer practitioner of Whitman County, Washington; died at his home in Colfax, Wash., June 22, aged 62.

William H. Booth, M.D. University of Iowa, Iowa City, 1877; a member of the Oregon State Medical Association; died at his home in Lebanon, Ore., June 18, from heart disease, aged 61.

Louis Van Altena (license, Wisconsin). For more than sixty years a practitioner of Sheboygan County, Wis.; died at his home in Cedar Grove, Wis., June 19, from heart disease, aged 84.

Daniel Boone Wilcox, M.D. Medical College of Ohio, Cincinnati, 1891; a member of the Kentucky State Medical Association; died at his home in Grayson, Ky., April 25, aged 57.

Clarence Weston Tolles, M.D. Bellevue Hospital Medical College, 1868; a member of the New Hampshire Medical Society; died at his home in Claremont, N. H., May 28, aged 69.

Samuel James Henderson, M.D. Long Island College Hospital, N. Y., 1866; of Bad Axe, Mich.; died at the home of his daughter in that city, June 14, from acute gastritis, aged 69.

Henry Augustus Gates, M.D. Bellevue Hospital Medical College, 1877; a member of the Medical Society of the state of New York; died at his home in Delhi, N. Y., May 23, aged 65.

Frederick Lee Johnson, M.D. Ohio Medical University, Columbus, 1895; of Worthington, Ohio; died in the Grant Hospital, Columbus, Ohio, June 20, aged 36.

George Richard Bowles, M.D. St. Louis University, 1866; of Ukiah, Cal., died at the home of his brother in Berkeley, Cal., March 7, from tuberculosis, aged 74.

William L. Cuthbert, M.D. Rush Medical College, 1862; of Long Beach, Cal.; died recently in St. Petersburg, Fla., aged 83.

Luman M. Godfrey, M.D. Detroit Homeopathic Medical College, 1875; died at his home in Kentland, Ind., May 4, aged 84.

Frank Richard Newman, M.D. Bellevue Hospital Medical College, 1871; died at his home in Brooklyn, N. Y., June 16.

Jesse Parker Bixby, M.D. Castleton (Vt.) Medical College, 1852; died at his home in Rushford, N. Y., April 3, aged 92.

Charles S. Barney, M.D. Albany, N. Y., Medical College, 1883; died at his home in Milford, N. Y., May 26, aged 55.

George L. Laforest, M.D. Victoria College, Cobourg, Ont., 1879; died at his home in Montreal, March 26, aged 57.

William Wayland Bonnell (license, Illinois, years of practice, 1878); died recently at his home in Astoria, Ill.

R. L. Barker (license, Tennessee, 1906); died at his home near Camden, Tenn., June 13, from tuberculosis.

The Propaganda for Reform

In This Department Appear Reports of the Council on Pharmacy and Chemistry and of the Association Laboratory, Together with Other Matter Tending to Aid Intelligent Prescribing and to Oppose Medical Fraud on the Public and on the Profession

DR. JIROCH COMPANY

A Fraudulent Mail-Order Medical Concern

For some years, the Dr. Jiroch Company, 533 South Wabash Avenue, Chicago, has been conducting a mail-order medical concern. On June 24, 1914, the federal authorities declared the concern fraudulent and denied it the use of the mails. The attorney for the Dr. Jiroch Company was Fletcher Dobyns of Chicago, the same man who appeared in behalf of a similar fraud operated from Detroit, the "Interstate Remedy Company." The Jiroch fakery also introduced, through its attorney, a physician, who attempted to justify the methods of this concern. This physician was Dr. Nathaniel H. Adams of Chicago, member of the Chicago Medical Society and, through this membership, Fellow of the American Medical Association.

The methods of the Dr. Jiroch Company were investigated some time ago by The Journal, and much of the matter that follows was written nearly two years ago. Other matters prevented the completion of the "story" and it was filed away.

THE PERSONNEL

As in all such cases, the physician whose name gives the title to this fraud has been but a mere stool-pigeon. At the time of The Journal's investigation, the real men behind the scheme seem to have been:

Melville W. Johnson, Garrett, Indiana, *President.*
A. G. Hagerty, *Secretary.*
Thos. R. Bradford, *Treasurer.*
F. W. Jiroch, *Medical Director.*

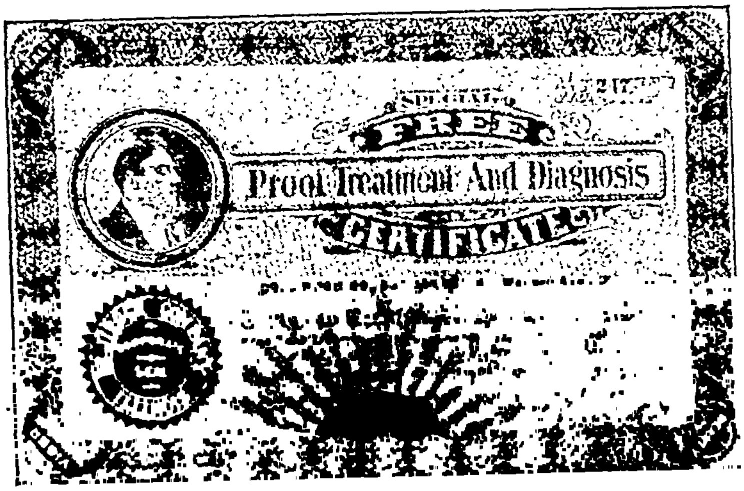
Jiroch was a student at the Harvey Medical College at Chicago at the time this low-grade institution went out of existence. He then seems to have gone over to Jenner Medical College, Chicago, by which school he was graduated in 1906, receiving a license to practice, from the State of Illinois, the same year. The practical man of affairs in the Dr. Jiroch Company seems to have been Thomas R. Bradford, who, it is said, was formerly with a somewhat similar fake concern, the "Blair Remedy Company" of Chicago. Bradford, apparently, is an old hand at mail-order medical frauds. In 1904, Thomas R. Bradford was operating a business in Cincinnati under the name of "Bradford & Company." The scheme was an attempt to sell an alleged cure for "lost vitality, sexual debility," etc., and was put out of business by the federal authorities in December, 1904.

ITS METHODS

The Dr. Jiroch Company obtained its victims through advertisements placed in the cheaper weeklies and daily papers. In addition, the concern bought or rented "sucker lists" either from letter brokers or from concerns in a similar disreputable business. An enormous amount of circularizing was done, much of it in a haphazard way; the member of The Journal staff, who has corresponded under assumed names with various medical frauds, was richly favored with Jiroch "bait" although he had never written to the concern, showing that these names had been purchased or rented.

While, in what follows, Jiroch's name is used as though he was the one individual responsible, it should be borne in mind that he was but the "hired-man" of the concern. Nevertheless all letters were signed (in facsimile) with Jiroch's name and the victim was led to believe that Jiroch gave personal and individual attention to each case.

The prospective victims were sent circular letters, printed in imitation of typewriting. With each letter was a brilliantly colored "certificate" that was alleged to entitle the holder to a "Special Free Proof Treatment and Diagnosis." Not all the "certificates" were the same; they varied in color and in the series of questions asked. Some were sent to those supposed to be suffering from "female trouble," others to those presumably deaf, still others to those whose ailments were of a general or indefinite nature. But whatever kind of "certificate" was sent they all offered the "Special Free Proof Treatment and Diagnosis."



SPECIAL
FREE
Proof Treatment And Diagnosis
CERTIFICATE

Photographic reproduction, reduced, of the "Special Free Proof Treatment and Diagnosis Certificate." This was one of the pieces of advertising claptrap used by the Dr. Jiroch Company to impress the ignorant. The evident intent was to make the recipient of these "certificates" imagine that he was receiving a special benefit from the company. The certificates were printed in various color combinations, the one reproduced above being in orange and purple. Each certificate bore what was apparently a serial number; as a matter of fact, all had the same number, "247."

THE "TREATMENT" FREE AND OTHERWISE

The Jiroch advertisements that appeared in the cheap weeklies also featured the "free treatment and diagnosis." Both the advertisements and the certificates contained a list of symptoms. Says the Jiroch Company:

> "Put an X mark before every symptom you have and two XX marks before your worst symptom."

Those who answered the advertisements or who sent in the "certificates" received a "free proof treatment" consisting of two small boxes of tablets, one kind pink, sugar coated and ovoid in shape varying in number from four to six; the other white or very faintly pinkish, sugar coated and cylinder-shaped varying in number from seven to fourteen. By the same mail, a circular letter came giving directions as to the use of the "free treatment." This "letter" also was prepared in imitation of typewriting and the name of the individual to whom it was sent was filled in by means of a typewriter. All of the "proof treatments" seem to have been identical irrespective of the age or sex of the persons to whom they were sent or whether the recipients were suffering from consumption, rheumatism or malaria.

Within twenty-four hours of receiving the "free treatment" the patient had inflicted on him, unasked, a "full size treatment." This came in a cardboard box holding four small boxes numbered respectively, "1," "2," "3" and "4." The boxes were labeled as follows:

Box 1.: "Prescription No. 16759. Directions: Take one tablet before or after the morning meal. Swallow with a little water."

Box 2.: "Prescription No. 29408. Directions: Take one tablet before or after the noon meal. Swallow with a little water."

Box 3.: "Prescription No. 30651. Directions: Take one tablet before or after the evening meal. Swallow with a little water."

Box 4.: "No. 4039. Directions: Take one tablet at bedtime, or as often as necessary to insure about two movements of your bowels each day."

The tablets labeled Prescription No. "16759" that came in Box 1 are white or faintly pinkish, sugar coated, cylindrical-shaped tablets, apparently identical with part of the "free proof treatment."

The tablets in the box labeled Prescription No. "29408" were large, bright yellow, sugar-coated tablets.

The tablets in Box 3—Prescription No. "30651" were brown, uncoated tablets oval in shape.

The tablets in Box 4, labeled "No. 4039" were apparently identical with the pink tablets that came with the "free proof treatment."

ANALYSIS OF THE "TREATMENT"

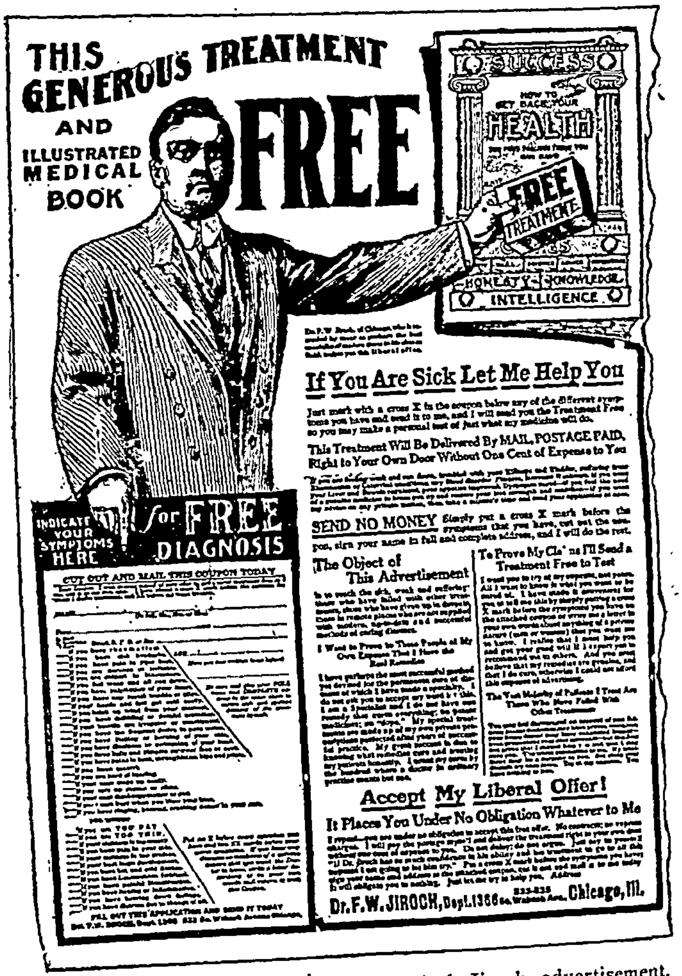
A complete set of the "Dr. Jiroch Treatment" was subjected to examination in the Association's laboratory, and the chemists' findings may be briefly summarized as follows:

Box 1. (℞ 16759): These pinkish pills were found to contain licorice root, starch, some vegetable extractive and a trace of alkaloid, apparently strychnin.

Box 2. (℞ 29408): These yellow pills were found to have for their chief constituents, powdered licorice root and cornstarch with small quantities of vegetable extractive.

Box 3. (℞ 30651): These tablets, according to the chemists, were found to consist essentially of cornstarch and extract of nux vomica. Quantitative analysis indicated that the total alkaloidal content was equivalent to about ⅓ grain of nux vomica in each tablet.

Box 4. (℞ 4039): These pink pills were found to consist essentially of starch and aloes, with a trace of strychnin. No other medicinal ingredient was found.


SUCCESS
HOW TO GET BACK YOUR
HEALTH
FREE TREATMENT
HONESTY
KNOWLEDGE
INTELLIGENCE

THIS GENEROUS TREATMENT AND ILLUSTRATED MEDICAL BOOK FREE

If You Are Sick Let Me Help You

This Treatment Will Be Delivered By MAIL, POSTAGE PAID, Right to Your Own Door Without One Cent of Expense to You

SEND NO MONEY

INDICATE YOUR SYMPTOMS HERE

for FREE DIAGNOSIS

CUT OUT AND MAIL THIS COUPON TODAY

The Object of This Advertisement

I Want to Prove to These People at My Own Expense That I Have the Real Remedies

To Prove My Claims I'll Send a Treatment Free to Test

The Vast Majority of Patients I Treat Are Those Who Have Failed With Other Treatments

Accept My Liberal Offer!

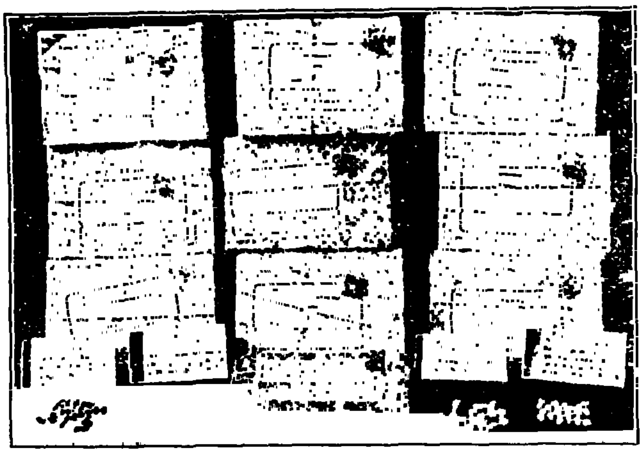
It Places You Under No Obligation Whatever to Me

Dr. F. W. JIROCH, Dept. 1366, 823-835 So. Wabash Ave., Chicago, Ill.

Greatly reduced facsimile of a typical Jiroch advertisement.

THE SLIDING PRICE SCALE

The same mail that brought the "full size treatment" also brought a circular letter—in imitation typewriting—supposed to contain a diagnosis of the patient's condition. These "diagnoses" were stock letters in which the name of the person addressed was filled in by means of a typewriter and two lines in the body of the letter purporting to be the "diagnosis" were also filled in. The victim was urged to send in $3 for this full-size treatment. If the request was ignored, the patient was bombarded with follow-up letters at more or less regular intervals, each letter more insistent than its predecessor in urging that money be sent for the treatment. As a rule, the first three follow-up letters maintained the original price, $3; the fourth letter offered to accept $1.50 while the fifth letter came down to $1.00. If this last offer failed to elicit a reply, Jiroch, apparently, decided that this individual did not belong in the "sucker" class and dropped the name from his books.



In investigating the Jiroch fraud, The Journal accumulated several of the "full size treatments" sent—unasked—to various hypothetical individuals. Here are ten of the "full size treatments," for which $3.00 each was asked—$30.00 worth. It would have cost the Jiroch Company 40 cents to have these medicines, for which they asked $30.00, returned, but the 40 cents was not sent. The reason? The $30.00 worth of pills were not worth 30 cents!

We know of no instance in which the Jiroch Company voluntarily sent the four cents postage for the return of the $3.00 "treatment." This is not surprising as it would not be "good business" to expend four cents in postage for the return of pills worth less than four cents.

WHAT WERE THE DIAGNOSES WORTH?

We have said that the second letter from Jiroch to his prospective victim gave what purported to be a "diagnosis" of the patient's case. As a matter of fact, this diagnosis, so-called, was one that could have been made by the girl typists who filled it in on the imitation typewritten letters—and perhaps was. Did the person put crosses against "rheumatism," "indigestion" and "piles," Jiroch made a "diagnosis" that the person was suffering from rheumatism, indigestion and piles. This was the method by which these quacks cajoled their victims into believing that a physician had carefully studied their cases and diagnosed their ailments.

To show the worthlessness of Jiroch's "diagnoses," The Journal had "symptom blanks" sent to the company from various parts of the country and describing widely varying forms of ailments. In every instance, Jiroch sent the free trial treatment and followed it up immediately with his "full-size treatment" together with a "diagnosis" letter detailing the very symptoms that had been sent in. The "full-size treatments" that were sent were all the same whether the supposed patient was suffering from consumption, rheumatism or Bright's disease.

One letter was sent from Virginia and a cross was put against the following list of symptoms:

"Spit up mucous and slime."
"Pain in the back."
"Heartburn and indigestion."
"Bowels irregular and constipated."
"Weak, nervous and trembling after slight exertion."

Back came the "diagnosis" letter which read:

"According to my diagnosis what you need to cure you completely is a thorough special treatment from the *Spitting up of Mucus, Pains and Soreness Across the Back, Poor Digestion, Constipation, Nervousness, Defective Elimination and Uric Acid Conditions.*"

The words that we have italicized are those that had been filled in on a typewriter. The "full-size treatment" sent in this case consisted of the four boxes containing the pills labeled respectively: Prescription Numbers "16759," "29408," "30651" and "4039"—price $3.

Another letter sent from a small town in Illinois had a cross placed against the following symptoms:

"Have sick headache."
"Heart trouble."
"Stomach trouble."
"Are depressed in spirits."
"Have twitching of the muscles."

The "diagnosis" letter to this supposititious patient read:

"According to my diagnosis what you need to cure you completely is a thorough special treatment for the *Headache, Poor Circulation, Stomach trouble, Depressed Spirits, Twitching Muscles, Defective elimination, and Uric Acid Conditions.*"

Here again the words we have italicized had been filled in with the typewriter—and the same boxes of pills were sent. Another symptom blank The Journal had mailed from a town in Ohio with crosses against the following:

"Are troubled with catarrh."
"Have dizziness."
"Are depressed in spirits."
"Have too frequent desire to pass water."

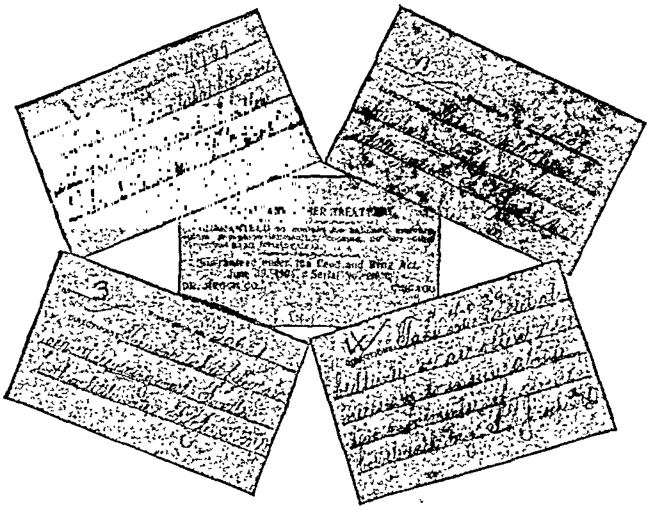
Quack Jiroch "diagnosed" this case:

"According to my diagnosis what you need to cure you is a thorough special treatment for the *Catarrh, Dizziness, Depressed Spirits, Bladder Trouble, Defective Elimination and Uric Acid Conditions.*"

In this case, too, the recipient of the diagnosis got the same stock "full-size treatment"—Prescription Nos. 16759, 29408, 30651 and 4039—with the usual request for a remittance of $3.

From a city in Pennsylvania The Journal had a symptom blank sent in describing as well as is possible by mail a case of diabetes mellitus. The person sending it in stated explicitly that he had diabetes and also put crosses against the following:

"Are losing flesh."
"Feel weak and all run down."
"Have itching or burning of skin."
"Have boils and pimples on face and on neck."
"Have too frequent desire to pass water."



Photographic facsimile of the labels on the four boxes sent to practically all those who filled out a "symptom blank" and sent it to the Dr. Jiroch Company. Whether suffering from rheumatism, diabetes, consumption, malaria or what not, the patient would receive the four boxes of pills labeled as shown above. The so-called individual treatment was a farce.

Diagnosing by mail is, of course, an anomaly. The scientific value of a diagnosis of ailments in persons who have never been seen and whose symptoms are described by the persons themselves, is *nil.* Nevertheless if any conclusion at all could be reached regarding the hypothetical case just described, it must have been that the patient was suffering from diabetes mellitus. What did Jiroch say?

"According to my diagnosis what your case requires now is a thorough special treatment for the *Kidney Trouble, Itching Skin, Impure Blood, Nervousness, Headaches, Defective Elimination and Uric Acid Conditions.*"

And the *treatment?* The same "full-size treatment" sent to the sufferer from consumption, rheumatism, etc., that is, Boxes Nos. 1, 2, 3 and 4 (Prescriptions Nos. 16759, 29408, 30651 and 4039). Worse yet, the diabetic—in common with all others—was told:

> "For your case I would advise a mixed diet."

A "mixed diet" recommended to a supposititious diabetic to whom the starches in such articles as bread, biscuits, potatoes, etc., and sugars, sirups and sweets might, in the amounts ordinarily taken, be deadly! A mixed diet, indeed!

Other diagnoses just as worthless as those detailed above, could be given, but these are sufficient to make plain the worthlessness of the diagnosis and the fraudulence of the Jiroch "treatment." Yet the Jiroch concern said about Jiroch:

> "I am a specialist and I do not have one remedy that cures everything . . . My special treatments are made up of my own private preparations perfected after years of successful practice."

One thing will be noticed regarding the fake diagnoses. No matter what other ailments the patients were supposed to have, they were all suffering—according to Jiroch—from "Defective Elimination and Uric Acid Conditions." Whether it was a case of *consumption, kidney disease or* "female trouble" every person whose case Jiroch professed to diagnose was a sufferer from "defective elimination and uric acid conditions."

The Post-Office Stops the Fraud

The matter preceding represents the investigations made by The Journal some time ago. That which follows is taken largely from the memorandum of Assistant Attorney-General Lamar to the postmaster general recommending the issuance of a fraud order. Judge Lamar's report says, that after a thorough review of the evidence submitted with the report of the post-office inspectors who investigated the Dr. Jiroch Company, he finds the facts to be as follows:

"The Dr. Jiroch Company and Dr. Jiroch are engaged in selling medicines through the mails. In order to obtain the names and addresses of persons to whom they may direct their solicitations, they advertise in newspapers and magazines having a general circulation throughout the United States."

THE CLAIMS MADE

A typical advertisement is then presented, of which the assistant attorney-general says:

"It will be noted that the representations contained in this advertisement are calculated to lead the reader to believe, among other things, (*a*) that for the purposes stated Dr. Jiroch will give free to anyone suffering from any of the symptoms described and responding to the advertisement a treatment for the permanent relief of the disease from which such person is suffering; (*b*) that this treatment will consist of special medicines adapted to the particular disease from which the applicant is suffering; (*c*) that Dr. Jiroch can and will diagnose and determine the disease from which the person so responding is suffering by means of the check marks placed before the symptoms set forth in the advertisement; and (*d*) that he can by this method cure kidney and bladder ailments, rheumatism, stomach, liver and bowel disorders, heart trouble, nervous weakness, catarrh and all other diseases arising from impure blood, uric acid conditions, etc."

SOME DIAGNOSES

Then follows the statement that those who answer the advertisements receive a stock letter, one of which was put in evidence, and with the letter the so-called free-proof treatment which was "the same in every case." The advent of the second letter was described and the letter itself put in evidence and the fact noted that the person who had answered the advertisement was sent, unasked, a "three-weeks' treatment," for which he was expected to send $3. Then the memorandum continues:

"In the investigation of this case, letters were written to the Dr. Jiroch Company by the inspectors under assumed names and asked treatment for the *following* conditions in turn: (1) 'Severe headaches for sometime and no medicine will give me any but temporary relief,' (2) 'A bad cough that I have had for quite a while—am all the time hawking and spitting,' (3) 'Loss of sexual power,' (4) 'Simply will not make *flesh*—otherwise well,' (5) 'Too fat and bust lacks development,' and (6) 'Female troubles.' In each of these cases, except that numbered 5 above, the applicant was sent the correspondence quoted above, and the affection of the applicant was diagnosed as follows: (1) Headache, defective elimination and uric acid conditions; (2) cough, spitting up slime and mucus, defective elimination and *uric acid* conditions; (3) failing manhood, defective elimination and uric acid conditions; (4) being too thin, defective elimination and uric acid conditions, and (6) female trouble, defective elimination and uric acid conditions. In case numbered 5 the applicant was written a letter in which she was advised that the symptoms given by her were rather unusual in combination and asked to give further particulars. In reply the inspectors gave the following information: 'Thirty-one years old, 5 feet 5 inches high, weight 154 pounds, not much fat on my breasts, have been fleshy ever since I was a young girl, both parents dead, father small, mother fleshy, breasts always have been flat.' Thereon the respondents sent to the writer the same letters as were sent out in the other cases, diagnosing her affection as obesity."

THE CLAIM OF INDIVIDUAL TREATMENT

The judge notes further:

"If a remittance is not received promptly in response to the letter accompanying the treatment for which a remittance of $3 is asked, other letters are sent the sufferer in which he or she is advised, among other things, that 'the treatment I sent you is exactly what you need,' that it 'was made up of my own private prescriptions, especially for your individual requirements,' that 'the treatment is a thorough one for every symptom and condition you described, and designed to cure you permanently,' and that 'I made a careful diagnosis of your symptoms and made up a treatment for the ailments you told me you wanted to be cured of.'

"The evidence *also shows that, when a remittance* is received and a report blank submitted, it is the practice of the respondents to advise the remitter that his case requires further treatment and to send him another supply of medicine for which they ask a *remittance of $5, together with another* report blank, on the receipt of which, filled out, they send him more medicine, and so on; and that the purpose of the representation that they have reserved for his use a free 'two-weeks' additional treatment' to be sent him after the receipt of his *remittance* of $3 and the report blank filled out is to give them an opportunity of sending him additional medicines for which they ask further remittances."

The memorandum then states that the post-office department had the assistance of some well-known practicing physicians of Washington, while, on the other hand:

DR. ADAMS TESTIFIES FOR JIROCH

". . . Mr. Dobyns introduced and examined as an expert witness for the respondents Dr. Nathaniel H. Adams of Chicago. The physicians called by the government testified that the symptoms *set forth in the advertisement* of the respondents, taken alone or in combination with any or all of the others, were symptoms of a large number of diseases; that each of these diseases required different treatment; that it was utterly impossible to tell the cause of these symptoms from the information obtained in accordance with the system followed by the respondents; that some of the diseases giving rise to those symptoms were incurable or only curable by a surgical operation, and that a postponement of proper treatment in many of those diseases would be dangerous.

"These facts are so well-recognized as hardly to require expert testimony to *prove*. They were admitted by Dr. Adams, who stated it as his belief, however, that the *marking* of the coupon in the manner directed by the *prospective* patient would afford *to* the respondents a clue by the use of report blanks, they could in the course of time determine with some certainty the disease from which he was *suffering*."

Then Judge Lamar continues:

ONLY 2 PER CENT. ADMIT BENEFIT

"I find from the evidence in this case that whether this treatment prescribed by the respondents is of value in any case where given in accordance with this system is entirely a matter of chance; and that this is well known to the respondents. That this is a fact is shown not only by the evidence above referred to, but also by the testimony of Inspector

Angier, who conducted the investigation in this case. Inspector Angier wrote to a large number of patrons of the respondents, and only 2 per cent. of those who replied stated that they had been benefited by the treatment given to them. There are also a large number of complaints in the case, alleging dissatisfaction.

NINETY PER CENT. OF THE "DIAGNOSES" MADE BY CLERKS

"Inspector Angier also testified, and no evidence to the contrary was submitted by the respondents, that but about 10 per cent. of the coupons on which the diagnosis and treatment are predicated are considered by Dr. Jiroch. The rest of the blanks are handled by clerks, who place on them numbers indicating the disease from which the applicant for treatment is suffering; these numbers indicate the medicines to be sent and the names of diseases or symptoms to be filled in in the diagnosing letter by other clerks. The letters sent out, however, although forms, are printed in imitation of typewriting and bear the signature of Dr. Jiroch in facsimile of handwriting."

A SUMMARY

In summing up, Judge Lamar says:

"From the evidence in this case it is clear, and I find, that the representations in the advertisements and circular matters of these respondents are false and fraudulent in that:

"1. Dr. Jiroch does not give free for advertising purposes a remedy for the permanent relief of disease; but on the contrary requires from persons who answer the advertisement a payment for the treatment which he prescribes.

"2. Dr. Jiroch does not intend to 'go over your other questions and symptoms and prepare my answer in full, and to pay careful attention to every phase of your trouble and write you fully in a day or so and tell you what else ought to be done to cure you completely,' as represented in the letter accompanying the free treatment, but intends to at that time send the addressee in a few days a form-letter made up by a clerk, together with certain medicines put together by a clerk, in accordance with the system followed in the conduct of this business.

"3. The free treatment does not consist of medicines adapted to the particular disease from which the applicant is suffering, but is in fact merely a tonic and laxative sent to all alike without regard to the particular symptoms of the individual case.

"4. The respondents cannot and do not determine the disease or affection from which the applicant for treatment is suffering by means of the marking of the symptoms set forth in the advertisement; and therefore cannot and do not prescribe medicines adapted to the cure or relief of the disease from which such applicant is suffering, unless by chance.

"5. The respondents do not know whether or not the applicant is curable, for they do not have sufficient information on which to determine this fact.

"6. The respondents cannot by this method cure kidney and bladder trouble, rheumatism, stomach, liver and bowel disorders, heart trouble, nervous weakness, catarrh and all other diseases arising from impure blood, uric acid conditions, etc.; but on the contrary this system is utterly impractical and any benefit resulting therefrom is due to chance.

"The postmaster at Chicago reports that the respondents receive approximately 275 pieces of first-class mail daily."

As a result, the assistant attorney-general for the postmaster-general recommended the issuance of a fraud order which, as previously noted, was put in force June 24, 1914.

HOW JIROCH GAVE "INDIVIDUAL TREATMENT!"

Showing in tabular form some of the results obtained by The Journal *in its endeavor to test the scientific value of the Jiroch company's methods*

Letter Sent	To	"Diagnosis" Made by Jiroch	Special, "Individual Treatment" Sent	Price Asked in Letters				
				1st	2nd	3rd	4th	5th
Dec., '11....	J. D. G—— Wyoming	Debility and neurasthenia; kidney trouble; dizziness; poor digestion; defective elimination; uric acid conditions.	℞16759; ℞29408; ℞30651; ℞4039	$3.00	$3.00	$3.00	$1.50	$1.00
April, '12....	W. H. M—— Ohio	Catarrh; dizziness; depressed spirits; bladder trouble; defective elimination; uric acid conditions.	" "	"	"	"	"	"
April, '12....	T. S—— Minnesota	Rheumatism; sore joints and muscles; diarrhea; defective elimination; uric acid conditions.	" "	"	"	"	"	"
April, '12....	E. R. B—— Minnesota	Itching skin; stomach trouble; weak lungs; impaired appetite; defective elimination; uric acid conditions.	" "	"	"	"	"	"
Sept., '12....	C. H. F—— Minnesota	Stomach trouble; defective elimination; uric acid conditions.	" "	"	"	"	"	"
Oct., '12....	F. L. C—— Illinois	Headaches; poor circulation; stomach trouble; depressed spirits; twitching muscles; defective elimination; uric acid conditions.	" "	"	"	"	"	"
Oct., '12....	W. B. D—— Virginia	Spitting up mucus and slime; pains and soreness across back; poor digestion; constipation; defective elimination; uric acid conditions.	" "	"	"	"	"	"
Dec., '12....	G. W. T—— Pennsylvania	Kidney trouble; itching skin; impure blood; nervousness; headaches; defective elimination; uric acid conditions.	" "	"	"	"	"	"

Correspondence

The Plague in the Sixteenth Century and Now

To the Editor:—In connection with the recent reported occurrence of a few cases of bubonic plague in New Orleans, it may be interesting to take a glance backward and see how times have changed and the world has moved, particularly through the intellectual development of the medical profession as regards preventive hygiene or sanitary science.

In Reyburn's "Life of John Calvin," the theologian, published this year, mention is made of the outbreak of plague at Geneva, Switzerland, in 1543, and he quotes a letter by John Calvin dated March 27, 1545, as follows:

"A conspiracy of men and women has been discovered, who for the space of three years have spread the plague through the city, by what means I know not. Fifteen women have been burnt. Some men have been punished even more severely. Some have committed suicide in prison. Twenty-five are still in custody. Notwithstanding, the conspirators do not cease to smear the locks of the doors with their poisonous ointment."

The methodical detail in cases of execution was to chop off the hands of the victims and then burn the bodies alive in a public place.

Geneva, a city of less than 20,000 population at that time, was regarded as one of the chief intellectual centers of Europe, but nevertheless ignorance, superstition and savagery went hand in hand; probably conditions there were no worse than in many other populous centers throughout the Continent. Torquemada had flourished during the preceding generation, Servetus was burned at Geneva in 1553 for a mere theological quibble, and, for witchcraft, George Jacobs was hanged at Salem, Mass., so late as 1692.

So the world does move.

George Homan, M.D., St. Louis.

Intra-Uterine Crying of Child during Labor

To the Editor:—I enclose a short report of an obstetric case that was novel to me.

Mrs. H., aged 17, American, primipara, was confined June 10. It was a breech presentation in which attempts at version were unsuccessful. The patient was put under anesthesia, the cervix dilated with the hand and one foot grasped and brought down. While I was trying to bring down the other foot, the peculiar phenomenon occurred. When I passed my left hand into the uterus, the baby began crying and continued uninterruptedly until the body and shoulders were delivered and the head engaged, the crying being heard by the anesthetist and others in the room. The child is living and weighs 10½ pounds.

H. A. Cables, M.D., East St. Louis, Ill.

[Comment.—The crying of the infant during the parturition while the head is still in the uterus, although a somewhat rare occurrence, is quite possible and cases are mentioned by most authorities on obstetrics. In order for this to occur, the membranes must be ruptured and air must have access to the interior of the uterus. Like ordinary respiration, it is excited by reflex action, and hence would be favored by manipulations. Stories of children crying in the uterus during pregnancy must be considered, from the evidence available, as absolutely fabulous.—Ed.]

Queries and Minor Notes

Anonymous Communications and queries on postal cards will not be noticed. Every letter must contain the writer's name and address, but these will be omitted, on request.

WASSERMANN REACTION IN LEAD-POISONING

To the Editor:—Can you tell me if a positive Wassermann reaction is obtained in lead-poisoning? If so, please give references to the literature. John H. Burke, M.D., Rockland, Mass.

Answer.—A positive Wassermann reaction has been obtained in a considerable number of cases of lead-poisoning; in a smaller number of cases, the reaction has been negative. The evidence is not sufficient to determine whether the positive reaction is due to syphilis or, in some way, to the influence of lead. It seems probable that many syphilitics are especially susceptible to lead-poisoning. It is also possible that the reaction, in some cases, is due to the fact that the lead-poisoning favors a positive result of the Wassermann reaction in cases of latent syphilis which would not otherwise react.

The following articles may be referred to:

Field, Cyrus W.: The Occurrence of a Positive Wassermann Reaction in Cases of Lead-Poisoning, The Journal A. M. A., June 1, 1912, p. 1681.
Dreyer, A.: The Wassermann Reaction in Lead-Poisoning, *Deutsch. med. Wchnschr.*, 1911, xxxvii, 769; abst., The Journal A. M. A., June 3, 1911, p. 1694.
Schnitter: The Wassermann Reaction in Lead-Poisoning, *Deutsch. med. Wchnschr.*, 1911, xxxvii, 1009; abstr., The Journal A. M. A., July 8, 1911, p. 174.
Perussia, F.: Lead-Poisoning and the Wassermann Reaction, *Deutsch. med. Wchnschr.*, 1911, xxxvii, 1545; abstr., The Journal A. M. A., Sept. 30, 1911, p. 1169.
Gibson, J. L.: Wassermann Reaction in Lead-Poisoning, *Australasian Med. Gaz.*, 1913, xxxiii, No. 14.
Hilgermann, R.: Wassermann Reaction and Lead-Poisoning, *Deutsch. med. Wchnschr.*, 1912, xxxviii, 118.

LITHIUM SALTS IN URIC ACID DIATHESIS

To the Editor:—There appears to be a diversity of opinion regarding the action of lithium salts in uric acid diathesis, some authorities declaring that their action as a solvent is much overrated and that the addition of lithium to the blood-serum does not increase the solubility of the uric acid in it. An opinion on this subject through The Journal would be greatly appreciated. E. Clayton, M.D., Vancouver, B. C.

Answer.—There is no reliable clinical evidence that lithium salts increase the excretion of uric acid by the kidney except as they exert a diuretic action. Experimental work has failed to show that lithium salts or the alkalies cause the absorption of deposited urates in gouty tophi, etc. The theory of the administration of lithium is founded on a misinterpretation of chemical facts. Lithium forms a highly soluble urate and in the test-tube may favor the solution of urates, but in the blood-serum and the urine other salts react in such a way that the urate is not made more soluble; thus, sodium urate is much less soluble than lithium urate, and as sodium is present in large amount in the blood-serum and in the urine there is, according to chemical principles, a tendency to the formation of sodium urate, which is soluble with difficulty, instead of the easily soluble lithium urate. Furthermore, the blood contains phosphates which tend to form with lithium the insoluble lithium phosphate so that the tendency, on the introduction of a lithium salt into the blood-serum or urine containing sodium urate and sodium phosphate, is to the formation of the insoluble lithium phosphate and the sodium urate, which is with difficulty soluble. There is no reason, therefore, to expect lithium salts to favor the solution of uric acid or urates, in the tissues, the blood-serum or the urine.

ARTICLES ON JUVENILE DELINQUENCY

To the Editor:—I should like to obtain material for a book on juvenile delinquency from a medical and surgical point of view. Can you refer me to any literature on that subject?

J. C. Crossland, M.D., Zanesville, Ohio.

Answer.—The following is a list of articles on this subject:

Literature on Relation of Disease and Crime, Queries and Minor Notes, The Journal, April 25, 1914, p. 1350.
Literature on Disease and Crime, Queries and Minor Notes, The Journal, May 9, 1914, p. 1494.
The Physical Basis of Crime: A Symposium, published by American Academy of Medicine, 52 North Fourth Street, Easton, Pa., $4.
Brown, P. K.: The Neurotic Basis of Juvenile Delinquency, The Journal, Jan. 20, 1912, p. 184.
Coulter, E. K.: Mentally Defective Delinquents and the Law, National Conf. Char. and Cor., 1911, p. 68.
Evans, E. G., and Dawson, M. W.: Feeblemindedness and Juvenile Delinquency, *Charities*, 1908, xx, 183.
Falconer, M. P.: Causes of Delinquency Among Girls, *Ann. Am. Acad. Pol. and Soc. Sc.*, 1910, xxxvi, 77.
Healy, W.: Factors Involved in Juvenile Delinquency, The Journal, April 25, 1914, p. 1328.
Newkirk, H. D.: Relation of Physical Defect to Delinquency, with Special Reference to Hennepin County Juvenile Court, *Bull. Am. Acad. Med.*, February, 1914.
Toeplitz, M.: Five Hundred Examinations of Nose and Throat in an Institution for Delinquent Boys, *Med. Rec.*, New York, March 14, 1914.
Frost, C. A.: Degenerate Girl, *Wisconsin Med. Jour.*, February, 1914.
Christian, F. L.: Defective Delinquent, *Albany Med. Ann.*, May, 1913.

KEROSENE THERAPY—TREATMENT OF NICOTIN HABIT

To the Editor:—1. One hears a great deal in rural practice about the therapy of kerosene. "It cures almost everything from rattlesnake bites to scarlet fever." Please discuss the physiologic action and therapy.

2. What drugs are used in the treatment of the nicotin habit, chewing, snuffing and smoking? A. C. S.

Answer.—1. Kerosene is an irritant. Its only effect would be due to the counterirritation produced by local applications for which there are much better agents.

2. The treatment of the nicotin habit is similar to that of the alcohol habit. See The Journal, June 21, 1913, p. 1933. For a description of the treatment of the cigaret habit by silver nitrate see The Journal, Jan. 17, 1914, p. 224.

ARTICLES ON TROPICAL MALARIA

To the Editor:—I desire to secure some recent literature on the treatment of malaria such as is brought to us from the Orient, which may not differ from other malaria.

W. E. Allaman, M.D., Dayton, Ohio.

Answer.—The following is a list of articles on this subject:

Hand, A.: Quinin in Malaria, *South. Med. Jour.*, September, 1912.
Goldthwaite, R. H.: Salvarsan and Malaria, *Mil. Surgeon*, October, 1912.
Fusco, V.: Salvarsan not Effectual in Malaria, *Gazz. d. Osp.*, Nov. 10, 1912.
Harris, S.: The Radical Cure of Malaria, The Journal, Nov. 26, 1910, p. 1879.
Lambelle, F. W.: Trypsin and Amylopsin in Malaria, *Pub. Health Rep.*, Jan. 3, 1914; abstr., The Journal, Feb. 14, 1914, p. 506.
Carter, H. R.: Quinin Prophylaxis for Malaria, *Pub. Health, Rep.*, March 27, 1914; Reprint 175, abstr., The Journal, June 27, 1914, p. 2042.
Braddock, C. S., Jr.: Tropical Malaria and Its Causes, *New York Med. Jour.*, May 16, 1914; abstr., The Journal, May 30, 1914, p. 1756.
Bass, C. C.: Treatment and Cure of Malaria, *South. Med. Jour.*, May, 1914; abstr., The Journal, Dec. 20, 1913, p. 2269.
Baermann, G.: Salvarsan-Copper in Frambesia, Malaria, Amebic Dysentery and Leprosy, *München. med. Wchnschr.*, Jan. 6, 1914.
Baetze, P.: Neosalvarsan in Malaria, *München. med. Wchnschr.*, Dec. 16, 1913.

Medical Economics

This Department Embodies the Subjects of Postgraduate Work, Contract Practice, Legislation, Medical Defense, and Other Medicolegal and Economic Questions of Interest to Physicians

STATE INSURANCE AGAINST SICKNESS

Robert A. Allen, A.B., M.D.
Surgeon A. C. White Lumber Company
LACLEDE, IDA.

Mike Ginski, coal-miner, had the misfortune to be hit by a rock falling from the roof of the slope where he was at work and when he was taken to the surface it was found that one of his legs was badly broken. He was removed to the local hospital and was there informed by the doctor it would probably be three months at the least before he could return to work. Now as Mike had a wife and three little children depending on him for support it would seem that that news should have caused him to worry. Such was not the case, however, and with reason, as the sequel will show. Mike was not at all indifferent to his family's welfare nor had he a bank account to draw on.

The coal-mine where this accident happened is in the state of Washington. This state has a workmen's compensation law which awarded him $2 for each working-day lost on account of his injury or $12 per week until he should be able to return to work. Mike also was a member in good standing of two fraternal orders, each of which, regardless of the number of his dependents, paid him $7 per week during the period of his disability. Thus, while his broken leg was knitting, he was receiving each week $26 for the support of his family. That was more than he had ever received for his labor underground. But what about his doctor's and hospital bills? He was in the hospital two months and under the care of a skilful surgeon. Several roentgenograms were taken and when by means of these it was found that the ends of the broken bone would not remain in apposition owing to the pulling of the patient's powerful muscles, the surgeon cut down on the fracture and united it firmly by means of steel plates. Three plaster casts had to be molded on the injured member before Mike could use it. By the time he was able to work it would seem that he might have bills to pay amounting to something like $300 for all this hospital care and medical service. On the contrary he did not have to pay a nickel.

The employees of the mining corporation for which Mike Ginski worked had for many years been organized into an association which provided medical, surgical and hospital care for themselves and their families. Every employee of the corporation *ipso facto* was a member of this association and one dollar was deducted from his wages each month and turned over to the treasurer of the association. It was out of the fund thus raised that the bills for Mike's care were paid. He was given the best possible treatment and the period of his disability was reduced to the minimum. No amount of wealth could have secured him a better result in a shorter space of time.

This was not all Mike got for his dollar. No matter what might ail him, whether it were a sore back or appendicitis, he was given all the necessary medical attention and medicines at no additional expense to himself. Should one of his little ones get sick, the association's physician attended the child throughout the illness. It cost his wife nothing to consult the same doctor concerning any of her ailments and receive treatment therefor. The only additional charges the association's physician was allowed to make were in confinement cases (for which he was limited to a fee of $10) and for treatment of venereal diseases and injuries resulting from fighting or intoxication.

Now contrast the case of Mike Ginski with that of John Smith, a well-dressed bank-clerk who lives in a city not many miles distant from the above-mentioned mining camp. Smith also is blessed with a wife and two little ones and his salary is equal to the monthly wages of the coal-miner. He is not exposed to the hazards of occupation incurred by the miner but he is just as apt to become ill. As a matter of fact, he did become ill one summer. It began with a headache for which he consulted the clerk at a corner drug-store and procured some tablets. He could not very well afford to consult a physician about such a small matter as a headache and pay $2 for what would cost him 25 cents at the druggist's. But the tablets did not stop the headache and John's appetite failed and he felt all out of sorts. His wife, becoming anxious, tried some home treatment, but without avail. He continued to grow worse and so finally, yielding to the importunities of his wife, he consulted a physician, with the result that he was ordered home and to bed. The following day he was told that he had typhoid fever and was advised to go to a hospital. So there he went.

It was three months before John Smith could resume his desk at the bank. For those three months he was without his salary. The bills for doctor, hospital care and nursing totaled $300 and meanwhile there was rent to pay and bills for groceries and fuel to meet. John was pretty badly in the hole. With the prevalent high cost of living the salary, $100 a month, did not leave much of a balance after paying for the necessaries of life, and that $400 or more of indebtedness looked like a huge mountain to remove. So John went back to work just as soon as he could. He really should have recuperated for a month in the mountains or at the seashore and would have done so had he been financially able. Poverty forces many a sick man to work when his body demands rest. It was many months before Smith caught up with his debts, and it might be added that the last one to get paid was the doctor whose faithful, kindly and skilful services had successfully carried him through his long illness. In the meantime the account with the physician had grown, for with the winter came the measles and unluckily the two Smith children caught it. Then the following spring another baby came to bless their home. This added $25 to the doctor's bill. A practical nurse for two weeks cost $30. It was necessary to have a girl to help with the housework and she cost $5 a week. Then there were the druggist's bills to pay. The filling of each prescription cost from 75 cents to a dollar.

What a contrast there is between the situations of these two men in meeting the exigencies of sickness or accident to themselves and their families! The Polish miner has all the best of it over the native American bank-clerk. Sickness and accident have no financial terrors for the miner. Simply by paying the fee of $1 per month he is enabled to meet all of the bills for doctor, hospital and drugs (with the possible exception of $10 for a confinement), and besides that, should he become incapacitated through an accident, the state pays him sufficient to keep his family in comfort. As to lodge benefits, of course, they are open equally to the bank clerk and the miner. The workingman, by means of a simple organization with the payment of a small fee, has been able to rid himself entirely of the burden, the ofttimes calamitous burden, imposed on him when sickness comes to himself or one of his family.

It is not surprising that workingmen who have learned to organize themselves in trade-unions should also unite for mutual protection against accident and illness. It is not surprising that American workingmen should be following in the footsteps of their European confrères with their Friendly Societies and their Krankenkassen. The only wonder is that they should have been so slow to imitate them. That the "sick-club" idea is rapidly taking root in the United States is not a matter for doubt. There is scarcely a city in the country in which medical societies have not issued edicts against members who accept contracts for lodge practice. The Eagles and Moose orders have been particularly active in this work. Although contracts of this nature certainly are open to severe criticism, yet it seems that able and reputable physicians can always be found to accept them.

It is the custom of large industrial corporations in all parts of the country, especially those involving the more hazardous occupations, such as mining, railroading and lumbering, to provide proper medical and hospital care for their employees in case of accidental injury. The cost of these services as a rule is defrayed from a permanent fund raised by deductions from each man's monthly pay check. Some corporations, such as the Northern Pacific Railway Company, permit their employees to administer this fund.

Through these voluntary and involuntary cooperative efforts to secure medical and hospital care at a low cost, workingmen are becoming more and more familiar with the economic value of the "sick-club" idea. They are getting rather well educated as to the power of their union organizations in bargaining with their employers. They are learning the lesson of solidarity of interest. It is easy for them, through their unions to adopt the "sick-club." The machinery of organization is already there. All they have to do is to appoint a committee to administer the sick-fund and arrange to have the monthly fees collected through the office of the employing corporation. This plan is now being followed in many mining towns on the coast in the state of Washington. There is ground for the belief that the time is not far distant when "Krankenkassen" will be as numerous in the United States as they now are in Germany and Austria. And from "Krankenkassen" to state insurance against sickness and accident such as was recently inaugurated in England is but another step.

The situation of John Smith is one big argument in favor of some such system of state sickness-insurance. The workingmen are able to secure that insurance through their industrial unions. At the other end of the social scale the wealthy have the means to command the most expert medical service and the best hospital care and nursing. Between these two extremes exists that large class, of which John Smith is offered as a type, which for want of a better term we may call the middle class or bourgeois, including the small merchants, the bookkeepers and accountants, the managers of departments and branches for large corporations, the technical engineers, the schoolteachers and college professors and the farmers. Here is a large class of the most intelligent and thrifty elements of the population, who are wholly unorganized and for whom absolutely no medical or hospital service is provided except what each individual is able to purchase out of his own income.

Of all this class the farmer is the most neglected. He is far worse off than the city dweller, whose water-supply is protected, whose milk-supply is inspected, whose garbage and sewage are disposed of, whose schools are sanitary and whose schoolchildren are given free medical and dental examinations; medical specialists of all kinds are within reach of the city clerk or bookkeeper, and hospitals and nurses are at his command. The municipality gives its citizens all possible protection against disease. The condition of the rural dweller, on the other hand, is little better than it was a hundred years ago. His water-supply is unprotected, his milk and perishable foods receive only what inspection he himself gives; his own excreta are deposited in an open privy-vault and his garbage and other refuse are thrown out on the surface of the ground; his schools are ill ventilated and improperly lighted and their sanitation is nil, while his schoolchildren grow up without any but the most haphazard supervision of their bodily health; for his medical service he is dependent on an overworked general practitioner, and for him hospital service is a luxury to be procured only in the most desperate cases. It has recently been shown by a careful social survey of certain rural districts that there is a much higher percentage of physical defectives among country children of school age than among city children of similar age.

At the meeting of the American Academy of Medicine in June, 1909, Dr. Woods Hutchinson said: "Our present system of medical attendance is a makeshift and an anomaly. Born in an emergency and tinkered up at odd times, it has never been properly planned out or thought through. It combines the maximum of expense to the patient and of loss by all sorts of accident to the physician, with the minimum of health production and prevention."

That sickness often imposes a crushing burden of financial loss on the thrifty is well known to every physician. This burden comprises not only the expense of medical treatment and nursing but the loss of wages and the temporary or permanent impairment of the patient's earning power. This loss in the end must be borne by society.

I have already cited the case of John Smith as exemplifying the situation of the middle-class people as regards the expense of medical attendance. Let me further illustrate this situation by two concrete cases out of my own experience:

Frank M. was a traveling salesman. He was buying a home in the city on the monthly payment plan. His son had just entered the state university and his daughter was in the high school. Then he became ill. His illness was chronic Bright's disease and he was incapacitated for work for months. Of course the outlook was not very favorable. His son was forced to quit the university and earn his own living. His wife secured employment in a department store to meet the expense of keeping her husband in the hospital. The house on which they were making payments finally had to be given up. Between non-employment and the cost of hospital and medical service, the home was wrecked.

The other case is that of a Slovak who for years had worked at the coke-ovens and had carefully saved his money with the hope of buying some farm land. Pulling coke out of the ovens is especially hard work, for fierce heat must be faced and hot dust and noxious gases inhaled. The Slovak was sober, thrifty and industrious. He had been married a few years but his wife had borne no children. Being anxious for a child they consulted a physician in the city and were prevailed on to submit her to an operation to remove the causal lesion. Unfortunately a fecal fistula resulted and it was nearly a year before the woman could leave the hospital. Other operations were performed in an endeavor to cure the fistula but without result. Needless to say, the woman did not become pregnant. All of this cost the Slovak workingman about $1,000, which more than wiped out his savings, and he had to begin again to save for the long-deferred purchase of the farm.

The fee system of remuneration for medical services is another potent argument in favor of state sickness-insurance. It is arbitrary, unreasonable and unsatisfactory and is not based on the value of the services rendered; it is utterly impossible to express the value of professional service in terms of dollars and cents. A physician who makes an unvarying charge of $2 for each visit to a sick person, regardless of whether it be to treat a sniveling coryza or to avert impending death from acute dilatation of the heart, merely admits the futility of an attempt to state the exact value of the work performed. As a matter of fact, it is doubtful if any physician pretends to stick to a certain schedule of fees. He uses his own judgment in making his charges. He takes into consideration the amount and character of the work performed and the ability of the patient to pay for it. Doubtless there are some unscrupulous practitioners who take advantage of this fact and demand more than the actual value of the services; but these are exceptions that only prove the rule. In the vast majority of cases the physician is the loser. Probably 90 per cent. of physicians do not receive one-half of what they actually earn, and even that statement may seem to some to be too moderate. The majority of practitioners do not even collect 25 to 50 per cent. of what they charge on their books. It is notorious that doctors' bills are the hardest to collect. It was stated in the report of the Judicial Council to the House of Delegates last June that "hardly more than 10 per cent. of the physicians in the United States are able to earn a comfortable income." What an enormous amount of charitable work the medical profession is doing!

State sickness-insurance would not only be a boon to the man of small income and large family (the usual combination) but it would greatly increase the fixed income of the large part of the medical profession. At the same time it would relieve the physician of the perplexing and disagreeable task of bill-collecting. In England the national insurance law has, in the first year of its operation, added from $750 to $2,000 to the annual incomes of the physicians who are working under it. One of the principal reasons why it is hopeless to wage war against contract practice is that it provides for a fixed and certain income and there are no unpaid bills to collect. All of the work done is paid for, no matter if some may argue that the pay is inadequate. These two facts make a strong appeal to the average physician. An advertisement in THE JOURNAL offering a contract practice with a fixed income of $300 a month and all expenses paid, would bring a bushel of replies.

One of the evil results of this uncertain and unreasonable system of medical rewards is that a large part of the public avoids consulting a physician until compelled to do so by pain or misery for which no relief can be found otherwise, or is impelled to do so by fear aroused by symptoms associated in the popular mind with serious disease.

A few days ago I happened to be standing in a city drugstore when a woman was asking the clerk for some medicine for her baby.

"I want something for the cramps," she explained. "Please give me something that won't hurt him but that will surely stop the cramps."

Now it was very evident that it was not medicine but good medical advice that she needed for her child. It must be that a vast amount of this counter prescribing is being done by druggists. It is easy to understand the reason. When a man has a headache he will consult a druggist rather than pay a doctor $1.50 for a prescription and then 50 cents or a dollar to have the prescription filled. If a child in the home becomes ill the mother is apt to use "old women's" remedies or consult a pharmacist rather than incur the expense of a physician who will charge $2 for his visit and perhaps write a prescription that will cost from 50 cents to a dollar to have filled. The headache may be the first symptom of serious disease, but it is not brought to the notice of a physician until all the drug-store nostrums have been tried without avail. The little child may have a diphtheria which is treated at home as a sore throat until all the rest of the family and a large part of the neighborhood have been infected.

The fear of the expense of medical treatment is also largely responsible for the patent-medicine evil. Many a man with a sore back decides that he has kidney trouble and purchases one of the innumerable nostrums advertised for this imaginary ailment. Could he have consulted a physician at small cost he would have learned the true nature of his trouble and have received rational treatment. There is no way of telling how many serious diseases are neglected in their incipient stages because of this all too prevalent habit of self-doping, to say nothing of the millions of dollars wasted on worthless nostrums.

If protected by sickness-insurance people are apt to consult the physician about their slightest ailments. They will go to him with their headaches and backaches, their cramps and constipation, their coughs and colds. Often trivial symptoms will thus lead to the discovery of incipient serious disease and it will be possible for the physician to take timely measures to prevent the spread of contagion, to institute proper remedial treatment and to instruct the patient how he may avoid chronic debilitating illness or early death. It will then be possible more nearly to approximate that medical ideal of eliminating preventable diseases and to advance toward that millenium when old age will be the only cause of death. Under such provision for medical attention its beneficiaries should soon become so well educated as to the value of disease prevention that they will submit themselves and their children for an annual physical examination by the physician, just as they now have their automobiles overhauled. Thus unsuspected abnormalities of structure or function may be discovered, defects of eyes, teeth, nose, ear and throat may be pointed out, beginning lesions of heart, lungs, stomach, liver and other internal organs may be detected, deficiencies of musculature or of mental development may be found and then the patient may be instructed how he may correct these defects, rid himself of these abnormalities and by proper hygiene and proper habits secure perfect health and ward off threatening disease.

In all social legislation the United States is following in the footsteps of Europe. Postal savings-banks, parcel-post and state insurance against industrial accidents all have been adopted after having been on trial for many years in European countries. It is only a matter of time when we will also have state insurance against sickness, non-employment and old age.

About 15,000,000 persons are now provided by the government with all necessary medical and hospital care and medicines. About 20,000 out of the 22,500 physicians in Great Britain are employed in this work and the government has paid them $20,500,000 or an average of $1,150 for each physician. Germany's new industrial insurance law, which went into effect on January 1, provides medical service and medicines for about 20,000,000 persons, in some districts covering from 92 to 95 per cent. of the population.

There are many indications that we are rapidly approaching the time when similar government insurance will be adopted in the United States. Many states already have adopted industrial insurance against accident and before many years it will have been adopted by every state in the union. The next step will be that which already is being vigorously advocated in the state of Washington, to provide for medical and hospital care for those injured in industrial accidents. It will then be but a short step to provide insurance against sickness as well as against accident and to extend the benefits of the act to all persons whose incomes fall below a certain limit. State medicine is the goal toward which we are traveling apace. We are more and more realizing that the health of the nation is the natural asset in greatest need of careful conservation. The prominence given such legislation as that covering child-labor, hours of labor for women, widow's pensions, the causes of poverty and non-employment, factory inspection, etc., reflects the intense popular concern for the physical well-being of the nation.

There is a clinic at Rochester, Minn., famous the world over. It is a Mecca for thousands of afflicted ones. The Mayos there have set up a supreme court of diagnosis and prognosis. One can accept their verdict as practically final. How has the Mayo clinic come to have such great authority? By reason of the fact that it utilizes every means and method known to science to arrive at a correct diagnosis and to establish a reasonable prognosis. Not a single part of the anatomy or physiology of the patient is overlooked. Every known test is made to ascertain any abnormalities of function or structure that may exist.

Such a clinic as this should be within the reach of every man, woman and child in the United States. The people, through their governmental organizations of municipality, state and nation, can establish such clinics and maintain them by general taxation. And the day will surely come when the people will do it. When that day comes we shall also have a system of state insurance against sickness such as is now operative in Germany and England.

Criminals and the Antisocial Diathesis.—There is no such thing as a distinct criminal type, and a careful study of anthropology does not justify the conclusion that there is. Our prison population, made up as it is of the weaklings of society—the flotsam and jetsam—who are incapable of and unable to maintain their places in the competitive struggle for existence, are not criminals in the deterministic sense, but they are necessarily of that diathesis from which we may expect, to a greater or less degree, antisocial attitudes.—D. C. Peyton, M.D., *Jour. Ind. State Med. Assn.*

Medical Education and State Boards of Registration

COMING EXAMINATIONS

Alabama: Montgomery, July 14. Chairman, Dr. W. H. Sanders, Montgomery.

Connecticut: New Haven, July 14-15. Sec., Dr. Chas. A. Tuttle, New Haven. Homeopathic: New Haven, July 14. Sec., Dr. Edwin C. M. Hall, New Haven. Eclectic: New Haven, July 14. Sec., Dr. T. S. Hodge, 19 Main St., Torrington.

Indiana: Indianapolis, July 14-16. Sec., Dr. W. T. Gott, State House, Indianapolis.

Massachusetts: Boston, July 14-16. Sec., Dr. Walter P. Bowers, Room 159 State House, Boston.

New Mexico: Santa Fe, July 13. Sec., Dr. W. E. Kaser, East Las Vegas.

Oklahoma: Oklahoma City, July 14. Sec., Dr. John W. Duke, Guthrie.

South Dakota: Deadwood, July 14. Sec., Dr. Park B. Jenkins, Waubay.

Vermont: Burlington, July 14-17. Sec., Dr. W. Scott Nay, Underhill.

Montana April Report

Dr. William C. Riddel, secretary of the Board of Medical Examiners of Montana, reports the written examination held at Helena, April 7-9, 1914. The number of subjects examined in was 10; total number of questions asked, 50; percentage required to pass, 75. The total number of candidates examined was 41, of whom 25 passed and 16 failed. The following colleges were represented:

College	Year Grad.	Per Cent.
PASSED		
University of Colorado	(1912)	76.7
Chicago College of Medicine and Surgery (1910) 77.1;	(1913)	84.5
Hahnemann Medical College and Hospital of Chicago	(1913)	75.2
Northwestern University (1898) 77; (1900) 83.5; (1903) 85.1;	(1904)	75.4.
Rush Medical College (1896) 76.4; (1912) 80.6;	(1913)	82.8
State University of Iowa, Coll. of Homeo. Med.	(1899)	77.7
University of Kansas	(1906)	84.8
Kentucky School of Medicine	(1898)	83.9
Harvard University	(1893)	79.1
Minnesota Hospital College	(1887)	82
University of Minnesota	(1909)	79.5
University Medical College, Kansas City	(1910)	75
John A. Creighton Medical College	(1913)	75, 79.8
Jefferson Medical College	(1909)	75.3
University of Tennessee	(1913)	76.7
University of Toronto (1908) 77.9;	(1910)	78.1
McGill University	(1896)	84.7
FAILED		
Rush Medical College	(1888)	64
Medical College of Indiana	(1900)	73.9
Keokuk Med. Coll., Coll. of Physicians and Surgeons	(1908)	47.7
State University of Iowa, College of Medicine	(1905)	73.8
Cioux City College of Medicinie	(1905)	54.2
University of Kansas	(1906)	66.3
University of Louisville	(1908)	62.9
Kansas City Medical College	(1905)	71.9
Marion-Sims-Beaumont Medical College	(1903)	62.4
John A. Creighton Medical College	(1909)	71.4
Ohio-Miami Medical College	(1911)	70
Medico-Chirurgical College of Philadelphia	(1908)	71.3
Marquette University	(1913)	68.5, 68.8
Milwaukee Medical College	(1910)	73
Wisconsin College of Physicians and Surgeons	(1905)	63.9

Rhode Island April Report

Dr. Gardner T. Swarts, secretary of the Rhode Island State Board of Health, reports the practical and written examination held at Providence, April 2-3, 1914. The number of subjects examined in was 7; total number of question asked, 70; percentage required to pass, 80. The total number of candidates examined was 7, of whom 6 passed and 1 failed. The following colleges were represented:

College	Year Grad.	Per Cent.
PASSED		
Georgetown University	(1909)	85.5
Harvard University	(1910)	90.5
Tufts College Medical School	(1913)	82.5
Dartmouth Medical School	(1910)	82
Columbia University, College of P. and S.	(1913)	88.2
Jefferson Medical College	(1912)	80
FAILED		
Laval University	(1912)	75.6

Book Notices

Pharmacology, Clinical and Experimental. A Groundwork of Medical Treatment. Being a Text-Book for Students and Physicians. By Dr. Hans H. Meyer and Dr. R. Gottlieb, Professors of Pharmacology. Authorized Translation into English by John Taylor Haldey, M.D., Professor of Pharmacology, Tulane University. Cloth. Price, $6. Pp. 604, with 62 illustrations. Philadelphia: J. B. Lippincott Company, 1914.

Two distinguished European pharmacologists have each written separate chapters in this work, but with such cooperation and collaboration as to form a homogeneous book. Pharmacology is regarded as a division of biology; those reactions have been chosen to illustrate it which have a relation to the cure of disease and may form the basis of "scientific drug therapy." In making this limitation the authors bring their subject into close relation to pathology and retain its significance for clinical teaching and medical practice. They have divided the drugs into two classes: organotropic, those which influence organs or their functions, and etiotropic, those which act on the causes of disease. Pharmacologic actions are discussed separately for each organ or functional system. By taking first the action of drugs on simple tissues such as voluntary muscle, the opportunity is afforded to develop the principles of the science gradually to suit the advancement of the student. By arrangement according to functions, the drugs of a group can be compared and the advantages of each pointed out. To be sure, this necessitates in many cases a consideration of the same drug under several different headings.

The first chapter deals with curare on account of its practical limitation to action on a single tissue, the voluntary muscles. To this is added a brief discussion of the nature of pharmacologic actions. The second chapter deals with the central nervous system. A single stimulant drug is described at considerable length, and this is followed by a general consideration of the chemical properties of alkaloids and a discussion of other stimulants. The actions are described fully but clearly and are illustrated by excellent diagrams. Each article is followed by a very full bibliography. The therapeutic sections deal largely with general principles. There is no detailed posology. A discussion of the size of the dose as affecting the action of the drug is given, but there seems to be no mention of the pharmaceutical preparations. Proprietary preparations receive comparatively little notice, but there appears to be a marked disparity in the space allotted to different remedies of this class. Thus digalen is dismissed with two sentences in small type, while digipuratum receives a paragraph of the larger type. Gottlieb says, "According to some observers (Höpffner) this preparation disturbs the stomach less than all other digitalis preparations of equal physiologic activity." There is a peculiar disagreement between the translator and this author. In discussing this proprietary (digipuratum), quite optimistic views are presented; this is quite natural since Gottlieb himself is the originator of and is interested in the preparation, but the translator evidently has forgotten this, and in a footnote calls attention to the laboratory investigations of Hatcher "which have clearly demonstrated that the nausea and vomiting produced by digitalis is usually the result of its action on the vomiting centers, and as the desired effects on the circulation often manifest themselves only with doses which also produce these undesirable effects, one must accept with extreme caution the claims made for any preparation of digitalis or any of its group that it does not cause gastric disturbances."

The translation is in general good, and the translator has added some valuable comments which add facts or correct misapprehensions liable to be produced by the text. Some minor inaccuracies and inelegancies of the translation or the text should be corrected in the next edition. The translator has the habit of using the obsolete expression "combust" for oxidize or burn, which is, at any rate, rather disquieting. On page 38 the statement is made that "0.02 gm. of Pantopon corresponds to about 0.1 gm. morphin hydrochlorid." In this case the amount of morphin meant was evidently 0.01 gm. since Pantopon contains 50 per cent. of morphin. This work is a very valuable and welcome addition to pharmacologic literature. The physician who bases his practice on the proved action of remedies as learned from such a book may use fewer books, but he is sure to use them with a certainty and efficiency which will greatly enhance his success.

Handbuch der Tuberculose. Herausgegeben von Prof. Dr. L. Brauer, Hamburg-Eppendorf, Allg. Krankenhaus. Dr. G. Schröder, Dirigierender Arzt der neuen Heilanstalt für Lungenkranke zu Schömberg, O.-A. Neuenburg, und Dr. F. Blumenfeld, Arzt für Nasen-, Hals- und Lungenkrankheiten in Wiesbaden. In 5 volumes. Volume 1. Paper. Price, 35 marks. Pp. 580, with 108 illustrations, Leipsic: Johann Ambrosius Barth, 1914.

This is the first part of the first volume of a thorough exposition of tuberculosis to be complete in five volumes. The work is really a second edition of the "Handbook of the Treatment of Chronic Pulmonary Tuberculosis," by Schröder and Blumenfeld, which appeared a decade ago. As the authors of that work found that in the attempt to lay a thorough foundation for treatment, they had laid themselves open to the criticism of writing a handbook of pathology as well as of treatment, they have avoided such criticism in the present edition by making the title cover the entire field of tuberculosis, and the better to accomplish their more comprehensive aim they have associated with themselves the noted investigator of the tuberculosis problem, L. Brauer of Hamburg. The list of collaborators includes forty-five names of men prominent in Germany, Denmark and Holland. About forty pages are devoted to the history of tuberculosis. The changes of theory, advance in diagnosis and the variations in treatment are presented. In a monograph of about one hundred pages, Tendeloo discusses the pathologic anatomy of tuberculosis. Much describes the germ of the disease and the subject of immunity. Römer describes the channels of infection. Martius discusses predisposition and individual prophylaxis, and Gottstein epidemiology. Dammann discusses the campaign against tuberculosis and Kirchner its social relations. The work will be of value mainly to those paying special attention to tuberculosis. To such it seems safe to say this work will be invaluable. It is to be hoped that it may be translated into English.

Medicolegal

Provision for Revocation of Licenses for Unprofessional or Dishonorable Conduct Construed and Applied

(Forman vs. State Board of Health (Ky.), 162 S. W. R. 796)

The Court of Appeals of Kentucky affirms a judgment dismissing the plaintiff's petition to enjoin the defendant board from proceeding to determine whether his license to practice medicine should be revoked, on the ground that the statute under which it was acting was void. The court says that the statute prescribes three specific grounds on which a physician's license may be revoked. These are, briefly: (1) fraud in obtaining the certificate, (2) the commission of a criminal abortion or the conviction of a felony involving moral turpitude, and (3) chronic inebriety; then, "(4) or other grossly unprofessional or dishonorable conduct of a character likely to deceive or defraud the public." The whole of the charge against the plaintiff was based on this clause, which must be read in connection with the preceding three. Some force must be given the word "other" and the word "dishonorable," which were not in the former statute that was held invalid because it prescribed no standard by which unprofessional conduct was to be measured. Evidently the word "dishonorable" was added to qualify the word "unprofessional," the two words meaning "unprofessional conduct which is dishonorable," and these words are qualified by the word "other," which must mean that the unprofessional dishonorable conduct referred to is other than that above specified. The well-settled rule in the construction of statutes is that where certain things are specified, and then a general expression is used in referring to other things, the other things must be of like character with those named. Two of the things above named being fraud in obtaining the certificate and the conviction of a felony involving moral turpitude, the grossly unprofessional and dishonorable conduct referred to in Clause 4 must be of like character; that is, the conduct must be fraudulent and must involve moral turpitude; for, unless the statute is so construed, proper effect will not be given the word "other," and when it is so construed it erects a definite standard by which the board is to be governed, to which every member of a learned and honorable profession should conform, and he may know in advance that he should conform to this standard. Similar statutes, applicable to lawyers, dentists, and men of other similar professions as well as physicians, are in force in a number of states. Such statutes have generally been upheld as a valid exercise of the police power to protect the public from fraud and empiricism.

So much of the board's complaint as showed that Dr. Forman aided one Whittman in conducting the "Advanced Medical Science Institute," and practiced medicine for the corporation for hire in its name, showed a commission of a public offense by Dr. Forman, but not an offense involving moral turpitude. While it is unlawful for a physician to practice medicine in any other name than his own, and he may be punished for doing so, his license may not for this be revoked, as not every unlawful act is ground for the revocation of a license. There is nothing in the Kentucky statute regulating the advertising which a physician may properly do, and, though he may in this violate the physician's code, it will constitute no ground for revoking his license unless his conduct it dishonorable, fraudulent, and involves moral turpitude. Whether the physician's acts were sincere or fraudulent and done for the purpose of defrauding the public is a question to be decided by the board on all the facts.

Charging Ten Dollars An Hour for Detention Services

(Merchants' Collection Agency vs. Gopcevic (Cal.), 137 Pac. R. 609)

The District Court of Appeal of California, Third District, says that the plaintiff, in suing on a claim assigned to it, alleged that the defendant became and was indebted to its assignor for professional services rendered by him in the amount of $6,962.50, etc. The record was quite brief as to the evidence. The inference from the assignor's testimony was that the services were performed under an express agreement with the defendant for the payment of $10 an hour, which the defendant denied, and the trial court rejected the theory of an express promise to pay $10 an hour or $240 a day. Of course any conscientious judge would require the most convincing evidence of such a contract before he would allow such an enormous charge. Nor is it likely that he would hold $6,960 to be a reasonable charge for the services, even of a physician, for twenty-nine days. But it was not correct to say that there was no evidence of the value of the services. The physician testified that "detention fees were $10 an hour," and that, in response to the defendant's statement, "I want you to stay right here and not go away," he replied: "Mr. Gopcevic, that is a very expensive proposition. The lowest charge I can make according to the fee bill is $10 per hour for detention." It is, of course, a fair presumption that the fee bill is an expression of the opinion of the profession that such services are worth that amount. It would be at least a legal inference from the physician's testimony that his services were worth $10 an hour. This would manifestly support a finding of a less amount, namely, the sum of nearly $1.30 per hour. The promise implied by the law is to pay the reasonable value of the services; but the court's conclusion being based on an implied contract, it was not proper to allow interest before judgment. Wherefore a judgment rendered in the plaintiff's favor for $480 and $125.55 interest is affirmed as to the former, and modified by striking out the latter sum for interest.

Society Proceedings

CONNECTICUT STATE MEDICAL SOCIETY

One Hundred and Twenty-Second Annual Meeting, held at New Haven, May 20 and 21, 1914

The President, Dr. D. Chester Brown, Danbury, in the Chair

Diagnostic Methods in Gastro-Intestinal Diseases

Dr. L. M. Gompertz, New Haven: A man, in August, 1909, complained of symptoms that led to a diagnosis of gastric ulcer. He was treated for a short time and felt so much better that he failed to return for further treatment. May 11, 1914, he came back with an aggravation of the symptoms previously noted, and with loss of weight. A test supper was given him, and an examination of the contents of his stomach made. The test supper contained rice, meat, raisins and anything else he desired. In the morning, a tube was passed into the fasting stomach. Many physicians are unable to get a fasting stomach's contents. It is very simple. Suppose the patient has a dilated stomach; he leans forward, you compress the tube, and anything that may be in this tube comes out. No matter how little is obtained, it is enough for microscopic examination. We obtained a little of the contents of the stomach of this man which showed the presence of sarcinae and food-remnants. Hydrochloric acid must be present, in order to favor the growth of sarcinae. A diagnosis of cicatricial ulcer was made. Two roentgenograms were made; one shows the tube going down to the pylorus and then stopping. There is an abrupt ending of the bismuth meal at the pylorus, due to the cicatrix of an ulcer; so we know it is not a malignant growth.

Another patient, seen at odd times since 1908, when any excitement occurs has a spell of vomiting, and cannot eat anything. Everything comes up almost immediately after it is swallowed. A lot of mucus and food is vomited. In attempting to pass a bougie into her stomach, we encountered an obstruction just above the cardia, 42 cm. from the mouth. The treatment then was passing bougies, and giving tincture of belladonna and bromids. The patient recovered. Two years later she had another attack and immediately after it she had spasm. She has had these spells so often, coming on when there was any excitement, that there is dilatation of the esophagus above the cardia.

A third case shows very nicely the transition of a nonmalignant growth into a malignant growth. The patient came to me June 20, 1907, with symptoms of ulcer on the cardiac end of the stomach. He had increased acidity. I treated him and he improved and gained weight. I did not see him for a long time after that. He came back in 1908 with a different history. His appetite was good, but he could not get food down. His bowels were constipated. I passed a bougie and met an obstruction right at the cardia. At times, this obstruction lets up a little, so that food can go down through it. It is positively a malignant case, and the patient still has the obstruction.

A fourth case was that of a young woman whom I saw eight years ago for the first time. The clinical history, chemical examination, etc., showed the case to be one of ulcer. She was treated for a month and I told her she needed an operation. After that I did not see her until a year ago, when she returned and said that she was ready for an operation. In passing the stomach-tube I found hydrochloric acid, sarcinae and food-remnants from the night before. I made a diagnosis of cancer of the pylorus, which was wrong. The reason for the mistake was that when the stomach-tube was passed it reached the obstruction in the center of the stomach instead of the pylorus. Just before the operation I had a roentgenogram made, not suspecting the presence of an hour-glass stomach. An end-to-end anastomosis was made and two months after the operation, the stomach was smaller, but normal in position. I have seen the girl within two weeks, and she is well.

The fifth case was that of a woman who had stomach symptoms and evidently a gastroptosis. When first passing the tube I thought she had an hour-glass stomach, but the next time I passed it into the stomach I told her she should be operated on. At the operation multiple ulcers were found. The ulcers were taken out and the stomach was brought into proper position by end-to-end anastomosis.

Bone Grafting

Dr. E. H. Arnold, New Haven: I have done bone-grafting in almost every situation in the body. I have grafted in clubfoot, and have done two operations in the tuberculous tarsus by inserting pieces of bone. I have grafted once on the tibia for an osteomyelitic defect, and I have grafted in the knee. This boy had a tuberculous knee for three or four years. He had it treated elsewhere by scraping, brace, and plaster of Paris; but the process of destruction went on. I did a resection of the knee, cutting away as much as I could. The result was that he had some motion in the knee. He went back to his trade three months after the excision. As one of the sinuses still persisted, I put in a bone-graft at the front of the knee, in order to do away with the movement. I have succeeded in this, but have not stopped the discharge so far. A tuberculous knee does not make bone, and the best we can hope for is a fibrous union. No brace will secure absolute immobility, and a child cannot be kept in plaster always.

In another case, I opened the hip and inserted two grafts. One of these sloughed out, but the other remained in. It stimulated bone-making to such an extent that I obtained a firm bony union. The child now walks without a brace.

The next group in which I grafted consisted of cases of sacro-iliac and sacrolumbar disease. In one case I operated, inserting a graft shaped like an inverted Y in the lower lumbar and upper sacral region. That did away with the joints, and I have secured immobility. I have grafted into the cervical region twice, and into the elbow for ununited fractures. I have also grafted into the shoulder, inserting the graft right into the glenoid cavity, and it has held, so far.

Experiments in Nutrition

Dr. T. H. Osborne and Dr. L. B. Mendel, New Haven: The length of life in the rat is not more than 1,000 days on the milk food. The rat will grow for a time on starch and then decline, after forty or sixty days. The foods which we use are water-free, and are mixed with lard. The rats grew on this food when it was mixed with protein, and failed to grow when it was not. On certain foods there was practically no growth. All that was necessary in order to have growth start again was to change the diet from an imperfect to a perfect protein. Some proteins are enough for maintenance, but not for growth. When the animals declined, all that was necessary to make them come up was to substitute butter, butter-fat or cod-liver oil for a little of the lard. Instantly there was perfect recovery and continuation of growth. The same is true of egg-fat. Solid fats sometimes failed to nourish the animals, but they quickly recovered when that fraction of the total butter was substituted by the butter oil. Most of the proteins that we have at our disposal to prepare these foods contain all the amino-acids, and are complete proteins. Others lack one or more amino-acids, and are incomplete proteins. Using these enables us to determine whether or not the protein that is lacking is of importance for growth and maintenance. The tryptophan group is essential for maintenance, for without it the animal dies in a comparatively short time. The lysin group is essential for growth, but not for maintenance.

This brings up another question, How long can an animal be stunted and still recover the power to grow? They go down hill on zein alone, are maintained on zein with tryptophan, and have growth by the addition of lysin. Another question is, Can we supplement the deficiency of the protein by adding another protein to it; and how well can that be done? If the proportion of casein is doubled, up goes the growth. One-fourth of destin is insufficient for growth; one-half is nearly sufficient, and three-fourths is sufficient. The different proteins have very unequal value. Milk-protein contains lysin, and corn-protein does not. The addition of lysin makes it all right. We added cystin to a diet of 9 per cent. casein, on which the rat was growing slowly, and it improved the growth. Here is an illustration of a rather unique experiment—an animal that was kept for 168 days on a food that did not contain lysin, and so was inadequate for growth; yet it was able to give birth to young, and to produce milk for them; but it did not recover its original weight. The animal was an adult. Its young were produced at the expense of the mother's life.

When we talk of anorexia as being due to sameness of food, we are probably in error. It is due, rather, to individual social conditions. One can eat the same thing, day after day, if one has the right diet. As soon as one has defective food, however, anorexia is produced. When we give them a defective food, the rats stop eating. The malnutrition, then, is the cause of the anorexia, and not vice versa.

Transplantation and Explantation of Tissues and Organs

Dr. Ross G. Harrison, New Haven: These experiments were made with embryos. They are operated on under a binocular microscope, and the parts are brought together and held in position by means of wires. They have lived for weeks after the operation, and have grown remarkably. It is quite possible to unite organs of different species together. Very often a union between parts of different species is very useful for experimental purposes, because the fact that the cells of the two species are of different color enables one to follow the development of the movements of the cells.

My early work in this direction was done by uniting relatively large pieces; but more refined methods have since been devised, whereby it is possible to use very much smaller parts. If older embryos are used and it is necessary to give an anesthetic, about 2 parts of chlorbutanol added to 10,000 parts of water will stop movement. The animal can be kept in this for a week, and will undergo its whole development almost normally in this solution.

It was a great surprise to me to find that if the little disk of tissue that represents a limb be turned around 180 degrees in transplanting, we still have a perfectly normal limb, developing in a perfectly normal position. Therefore, the position must be determined by some factor in the body of the embryo as a whole. Likewise, in a great majority of cases, the interchange of right and left has no effect.

As to the question of explantation, whereby the parts are transplanted to some medium outside of the body: we know that the parts of animals may live for some time after the death of the organism as a whole. It is not strange, then, that muscles and nerves should survive outside the organism with which they have been connected, and undergo development as well. Muscle-tissue that is entirely undifferentiated when taken out of the embryo will differentiate without the presence of any other tissue whatever. Other tissues will also develop normally. The development of whole embryos has been shown by this method. Even the mammalian embryo will undergo at least a portion of its development. A method has been devised whereby it is possible to obtain large quantities of plasms with which to carry on experiments concerning these processes of growth. Tissues have been grown, not only in this plasma medium, but also in a saline medium. The latter is not so good as the former, but adding sugar or other nutritive material improves it.

As a usual thing, tissues cultivated outside the body retain their specific function, although the gross morphology may not be retained. The degree and kind of solid support has considerable effect on the movement of the cells.

Apparatus for Suction and Aspiration in the Treatment of Empyema

Dr. J. M. Flint, New Haven: We have had a series of forty cases of empyema of various kinds and types—the pneumonic, the hematogenous, and one or two interesting cases in which the empyematous process was secondary to abdominal infection. I mention this particularly, because of the recent discovery of a group of lymphatics passing through the diaphragm, and ramifying with the plexus on the surface of the pleura—which gives a definite anatomic route for infections occurring secondary to abdominal conditions, of which phrenic abscess is the most common. We have a method of treatment that we have found eminently satisfactory. Five or six years ago we devised an empyema tube, which has given most excellent results. It is like an ordinary empyema tube, but has a large rubber dam. Absolutely air-tight openings can be made in the chest wall, by which the normal tension can be replaced. The use of the Politzer bag is impossible in cases in which empyema is associated with bronchial fistula, because the leak through the bronchus causes the bag to collapse. We devised a water vacuum to obviate this difficulty. Thus we are able to suck through the empyema tube enough air to overcome the ordinary leak and still keep a partial vacuum in the empyema cavity.

(To be continued)

NEW YORK ACADEMY OF MEDICINE

Meeting held May 21, 1914

L. Emmett Holt in the Chair

The Cultivation of Human Cancer-Cells in Vitro

Dr. M. T. Burrows: During the past few months I have been testing a considerable number of human tissues by the culture method. The tests have been made either autoplastic or homoplastic. The specimens included lymphomas, a fibrosarcoma of the axilla, a recurrent chondroma of the femur, two melanomas, several carcinomas of the breast, a thyroid sarcoma, and adenocarcinomas of the lymph-nodes of the neck and groin, cystomas, and a recurrent adenocarcinoma of the ovary. When possible the tissue in small fragments was placed in plasma as soon as obtained. The plasma had in most instances been used pure. In other instances it had been diluted one-half with isotonic sodium chlorid solution. Control cultures of normal tissues of dogs and cats were prepared in a similar manner. About the fragments of the lymphomas, the chondroma, the fibrosarcoma and normal connective tissue taken from the same individuals, the reaction in the plasma was similar to that generally seen with the growth of similar tissues of other animals. The clot contracted, showing pitting of the free surface about the tissue border. The medium became more clear in this region. No extensive or disorganized accumulation occurred. Fragments of fibroma lived for eighteen days following several transplants. From the fragments of the lymphomas both round and spindle cells migrated into the plasma. The fragments of the carcinomas had varied considerably in their ability to survive in the cultures. In but two cases had actual growth of the cancerous element been observed. In the other cases a rapid autolysis with or without fibrin digestion was observed. This autolysis was most marked about the carcinomas of the breast and thyroid and one of the ovarian tumors. The medium was digested slowly about many of the fragments of the melanomas.

Influence of Diet on Transplantable Sarcoma in Rats

Dr. S. P. Beebe: We found that if carbohydrates were entirely eliminated there was a smaller percentage of positive takes; the tumor grew more slowly and a larger percentage showed complete regression as compared with control animals on a full diet. In one experiment 26 animals were placed on a special diet and 26 on a full diet. They were all planted with the same tumor the same day. Every animal planted took the tumor. Of those animals on a special diet which contained no carbohydrate, 2 died from the tumor, 4 died from accident or unknown cause and 20 showed complete regression of the tumor. Of the 26 animals on the control diet containing carbohydrate, 24 died from the tumor and 2 recovered. In order to obtain such effects it was found necessary to prepare the animals by feeding them on a special diet for some time before planting the tumor. Our experiments have shown that butter is a very effective stimulant to the growth of the buffalo sarcoma. A much larger percentage of animals were killed by the tumor when the animals were fed on butter. In some instances at the time of death of the animal, the tumor mass weighed two and one-half times as much as the rest of the animal. In one instance the weight of the tumor dissected out at the time of death was 130 gm. compared with 51 gm. of the body of the rat. We have made some experiments with diet containing certain proteins and we have found that it is impossible to maintain an animal in a fairly satisfactory condition of nutrition and yet prevent the growth of the tumor.

The Sugar-Content of the Blood in Cancer

Dr. S. R. Benedict and **Dr. R. C. Lewis**: Rats with transplantable sarcoma when fed on a non-carbohydrate diet showed an increased resistance to tumor growth, provided there had been a long preliminary period of non-carbohydrate feeding. There were a fewer number of takes, a greater number of retrogressions, and a slower rate of growth of the tumor in rats on a non-carbohydrate diet than in those in which a mixed diet was employed. When the diet contained carbohydrate, the tumors grew luxuriantly. Far more striking results were obtained on phloridzinized tumor-bearing rats. The animals were positively hopeless from the point of view of spontaneous retrogression. Almost at once after the injection of the phloridzin the tumor began to soften. This was followed by a breaking down of the growth and finally by a sloughing of the entire mass. In these phloridzinized rats there was a condition of complete carbohydrate starvation in that not only were the carbohydrates of the diet excluded but also the carbohydrate arising in the body from metabolism of proteins was eliminated in the urine. This result might be due to a general malnutrition, which, in turn, was followed by the effect on the tumor; or it might be that the carbohydrate *per se* was necessary for the tumor growth. In our study of the blood-sugar content of cancer patients we have developed a simple method of blood-sugar determination which offers certain advantages over the older methods; one marked advantage is that only a very small amount of blood is required. We have examined the blood of fifty-three hospital patients suffering from malignant growths, making about 200 examinations in all. No special relation between the pathology of the growth and the blood-sugar content has been found, but during more severe stages of malignant growth there was certainly a marked hyperglycemia.

Treatment of Cancer by Electrical Methods

Dr. Arthur F. Holding: The electrical methods employed in my series of cases were Roentgen deep therapy, effulguration (de Keating-Hart), desiccation (Clark) and thermo-penetration. These therapeutic agencies were combined with surgery, radium, toxins and vaccines, when such adjuvants were indicated. The results were due not so much to any originality of method as to the correlation of very excellent methods. Incipient surface cancers can be cured. If they are superficial, physical methods should be employed. These in the order of their preference, are massive doses of Roentgen rays, desiccation, radium and destructive caustics, provided the more expensive equipments are not available. Surface cancers, if tending to extend into the deeper structures, demand surgical treatment, but should also be treated by preoperative massive doses of Roentgen rays, effulguration at the time of operation, and postoperative deep Roentgen- or radiotherapy. Beginning cancer of the gastro-intestinal tract can be diagnosed with accuracy by recently improved Roentgen-ray methods. Inoperable malignant conditions cannot be cured by any method of treatment as the ultimate prognosis is 100 per cent. bad. The methods advocated are very expensive, and hence, if the work is to be continued, sufficient money must be raised to carry it on. This means for institutions proper endowment and for individuals adequate fees.

General and Experimental Therapeutics in Cancer

Dr. Richard Weil: In undertaking the treatment of any case of cancer we have accepted as axiomatic the principle that operation, whenever available, is the method of choice. This rule applies not only to all cases in which operation offers a hope of radical removal of all traces of the disease, but also to those borderline cases in which radical removal is excluded by anatomic conditions. In all cases of both groups we have made a practice of reenforcing the operation by supplementary measures in order to obviate the possibility of implantation recurrence, as by an immediate and thorough fulguration of every recess of the wound. This procedure was associated with no disadvantage of any kind that we have been able to discover. For a varying time after the operation the site was subjected to intensive Roentgen irradiation. In addition we have used the operative procedure as an adjuvant to other measures and, finally, we have used it in combination with other modes of attack, as, for instance, radium. The physical methods of treatment have been employed as extensively as possible. It might be said of both operative and the physical modes of attack that their effectiveness is sharply circumscribed and local in character. In addition to these we have attempted to develop the metabolic treatment of the disease. We have studied the effects of colloidal solutions of a series of metals, including mercury, arsenic, copper, lead and selenium, on human cancer. None of these substances is actually toxic to the cancer-cell, and we have therefore discarded their use. We have also studied the localization of a large series of synthetic dyes in rat-tumors, and although it has not been possible to discover any dye possessing a distinct affinity for neoplastic tissue, it was found that certain dyes of the diazo-group lodged in larger amounts and remained for much longer periods in the tumor-tissue than in the normal tissues of the body. The use of toxins, as elaborated by Coley, is to be regarded as a form of chemotherapy, even though the chemical constitution of the agent is entirely unknown. Closely related to the chemical methods is the attack on cancer by the alteration of the metabolic environment. The immunologic methods of treatment seem to offer the most hopeful promise. Active immunization has been accredited in the literature with certain apparently indisputable cures. There has been a fairly extensive use of vaccination, and although it is too early to form a definite judgment as to the final results, there can be no doubt that in many cases it has produced very marked shrinkage of the tumor, which has, in some instances, disappeared completely.

SOUTH DAKOTA STATE MEDICAL ASSOCIATION

Thirty-Third Annual Session held at Watertown, May 26-28, 1914

(Concluded from page 58)

Chronic Gastric Disturbances; Differential Diagnosis

Dr. G. Eusterman, Rochester, Minn: Chronic simple ulcers of the stomach and duodenum furnish the typical syndrome of dyspepsia. The attacks alternate with free intervals, as a rule, and last from several weeks to a month or longer. The symptoms are less variable with duodenal than with gastric ulcers. Spring and fall seizures are quite common in the former. Hunger-pains, so-called, are frequently absent. Definite hemorrhage occurs in less than one-third of all cases. Tenderness plays a minor rôle and is invariably absent until the peritoneum is involved. Persistent tenderness to a marked degree suggests protected perforation. In the majority of instances, one may make a reasonably safe clinical diagnosis of ulcer, but to say that a given case is definitely gastric or duodenal is a more difficult matter. The atypical cases or in types in which there is a paucity of symptoms, the result of test-meal analyses and roentgenoscopic findings are of correspondingly greater importance.

Uncomplicated ulcers of the duodenum and pylorus are usually so definite in their symptomatology that they may be diagnosed with but little trouble. In ulcer of the stomach proper the facts are not so clear-cut as in the duodenal and pyloric types, nor are the day-by-day symptoms so clearly defined. In cases with lesions well above the pylorus the symptoms are apt to be continuous for longer periods, or remissions rather than free intervals are apt to be present. The pain and distress are not so often eased by food, or small amounts of food may give relief, while increased food may give distress. More care in diet and careful attention to the physical and nervous states are necessary. Soda relieves when food does not. Pain begins earlier, as a rule, often disappearing before the next meal, and thus the food-relief feature is minimized; but pain from half an hour to one hour after food is the usual rule and is of great diagnostic significance. Radiation and diffuseness of pain are considerably more extensive in gastric than duodenal types. Vomiting is rather more common in gastric ulcers than in uncomplicated ulcers of the duodenum and pylorus. Owing to a delayed emptying capacity, the vomitus usually contains food in an early to a moderate stage of digestion. Hematemesis is more frequent in cases of the gastric type. Chronic recurrent types of appendicitis may closely simulate the clinical picture of a peptic ulcer owing to reflex motor and secretory perversion of the gastric functions.

In ulcer of the stomach, definite diagnosis is made in over 60 per cent. of the cases by a combined use of the fluoroscope and roentgenogram of the bismuth-filled stomach. In duodenal ulcer the cardinal sign is that of heightened peristaltic activity of the stomach. In these cases the clinical symptom-complex is so definite in about 90 per cent. that the present Roentgen-ray limitations are of less significance. In addition, the roentgenographic examination may give the first definite evidence of spasmodic or hour-glass deformity, cirrhosis and of other malformations whether due to intragastric or extragastric disease processes. The screen also furnishes most reliable information as to the position, size, tonus, mobility, peristaltic activity and emptying capacity of the stomach.

DISCUSSION

Dr. W. D. Farrell, Aberdeen: One reason why so many cases of upper abdominal disease are not diagnosed until there are complications is that we are looking for cardinal symptoms which do not develop until there are complications. We should look for the lesser symptoms and endeavor to make a diagnosis from them. Adhesions in the upper abdomen are produced by a low grade of inflammation; they are therefore slow in forming and may not produce any symptoms until they have become extensive. Some of the abdominal pains are reflected from the pleura, from the spinal column, and from the hips, and they may be very confusing.

Dr. A. C. Stokes, Omaha: I divide stomach conditions into three classes; first, stomach conditions due to habit, which embrace irregularities in eating, improper food, too much food, too much drinking, too much sitting up at night, or too much getting up early in the morning; second, stomach reflexes; stomach conditions due to kidney disease, eye disease, to bad teeth, etc.; third, pain referred to the upper abdominal region. In this division I have not conceived any method or system by which I can always make a definite diagnosis.

Dr. T. F. Riggs, Pierre: A man, aged 33, had recurrent pains in the upper abdomen for two or three years. The period of recurrences varied from three to six weeks, and the duration of the recurrence was about a week. He had marked hyperacidity. His free hydrochloric acid was 68; there was blood in the stools, microscopic as well as macroscopic, and tenderness over the right quadrant of the abdomen, but no definite diagnosis was made. There were three provisional diagnoses made. The first one was ulcer of the duodenum; second, gall-bladder adhesions or old cholecystitis, and third, possible involvement of the appendix. At operation the second and third conditions were found.

Dr. Thorsen N. Kjerland, Webster: A woman had been sick for about three years with all the symptoms of duodenal ulcer. We operated and found the duodenum in a perfect condition, but the gall-bladder was greatly distended with bile and there was general visceroptosis. We also found a large concretion in the appendix.

Dr. A. H. Young, Pierre: It is a great mistake to see such a lack of coöperation between the surgeon, the general practitioner and the laboratory man. They should work together.

Prevention of Disease

Dr. F. H. Spafford, Flandreau: The most valuable service which we can perform for mankind is the prevention of disease, and this can be done only by men trained to meet the new conditions. In the past this work has devolved almost entirely on the physician, but as the science of sanitation is broadening there will be an imperative call for men of some fundamental training and of good executive ability. The health officer of the future will be a biologic engineer as well as physician. This is going to open up a broad field, a new career for young men, men who will effectively put into active operation and enforce all the laws, rules and regulations which have been enacted for the conservation of health.

Current Medical Literature

AMERICAN

Titles marked with an asterisk (*) are abstracted below.

American Journal of Diseases of Children, Chicago

June, VII. No. 6, pp. 409-500

1 *Excretion of Phosphates in Infancy. J. H. M. Knox, Jr., Baltimore, and M. Tracy, Philadelphia.
2 *Voice Sign in Chorea. W. B. Swift, Boston.
3 *Observations on Physiologic Anatomy of Infant's Stomach Noted in Course of Use of Balloon-Duodenal Catheter. A. F. Hess, New York.
4 Metabolism in Osteogenesis Imperfecta with Special Reference to Calcium. A. Bookman, New York.

1. **Excretion of Phosphates in Infancy.**—Knox and Tracy's work confirms the earlier observations that the urinary phosphorus excreted in twenty-four hours by an artificially fed infant is greater than that recorded for the breast-fed child. The data obtained by experiments, however, do not, in their opinion, justify the conclusion that any deduction as to the nature or severity of the nutritional derangement can be drawn merely from the amount of urinary phosphorus. The estimation of the daily phosphorus excretion from small, single urine samples is held to be unreliable, as the results thus are often at variance with those determined by examination of the twenty-four-hour urine.

2. **Voice Sign in Chorea.**—Examination by Swift of vocal utterance in chorea on the kymograph demonstrated a pretty constant voice change of rise in pitch and increase in intensity accompanying choreic movements—a vocal change—which, he says, deserves recognition as a new sign in chorea. He found that choreic contractions cause changes of pitch and intensity in vocal utterance. The most marked change is in the rendering of the vowel *a* as in *around*. Increase of intensity comes from increased contraction of expiratory muscles, and rise in pitch results from increased contraction of the muscles of the vocal cords. And chorea makes these contractions. In other words, or stating the same in its order of sequence, choreic muscle contractions in the expiratory muscles makes increased air pressure, which results in increased intensity in the voice; and choreic muscle contractions in the muscles moving the vocal cords result in increased tension there, which increases the frequency of vibration and raises the pitch in the voice.

3. **Anatomy of Stomach.**—In several instances Hess has been able, by means of the balloon-catheter, to bring about cardiospasm artificially, although he could not invariably accomplish this result. If the balloon was dilated within the stomach and then retracted so that firm pressure was brought to bear on the cardia for a few minutes, at times marked cardiospasm resulted. In some instances, after carrying out this procedure it was absolutely impossible to pass an ordinary catheter into the stomach. It is difficult to state, says Hess, whether this fact has clinical or pathologic significance, but it suggests the possibility, however, that cardiospasm may be the result of increased pressure within the gastric cavity, that it may be incited by an over distention of the stomach with food, or, more probably, with food and gas, and that the *Magenblase*, or air cushion, so constantly seen at the uppermost part of the infant's stomach, may at times assume pathogenetic importance.

American Journal of Medical Sciences, Philadelphia

June, CXLVII, No. 6, pp. 781-936

5 Sarcoma of Stomach. C. H. Frazier, Philadelphia.
6 Examination of One Hundred Painters for Evidences of Lead Poisoning. E. R. Hayhurst, Columbus, O.
7 Three Cases of Fatal Gastro-Intestinal Hemorrhage. G. E. Armstrong and E. J. Mullally, Montreal.
8 *Process of Bone Repair Following Trauma. F. W. Bancroft, New York.
9 Diabetes Mellitus and Its Differentiation from Alimentary Glycosuria. A. Eustis, New Orleans.
10 Chloroma of Myeloid Variety. F. X. Walls and A. A. Goldsmith, Chicago.
11 *New Method of Gastric Testing. M. E. Rehfuss, Philadelphia.
12 Osteitis Deformans (Paget) Involving Right Femur Only. S. H. Hurwitz, Baltimore.
13 *Valvular Heart Disease Contributory Etiologic Factor in Pulmonary Tuberculosis. N. B. Burns, North Wilmington, Mass.
14 Classification and Treatment of Hemoptysis. F. M. Pottenger, Monrovia, Cal.
15 Case of Congenital Absence of Lower Half of Interauricular Septum. R. Kilduffe, Jr., Chester.

8. **Process of Bone Repair Following Trauma.**—Bancroft's work was undertaken to attempt to learn the method of repair in bone cavities. An effort was made to secure a cavity in which absolute hemostasis occurred, and therefore a dead space. The humerus was exposed usually by a median incision, the periosteum was removed for a distance of at least 3 cm. in length and for almost the entire circumference of the bone. A rectangular piece, 1 by 0.6 cm., extending into the medullary canal, was removed from the median surface of the diaphysis, and the medullary cavity was thoroughly curetted and packed until hemostasis occurred. Realizing that this hemostasis was only temporary, and that oozing probably occurred from the medullary cavity after suturing the muscles over it, various experiments were tried: (1) the cavity was packed and then filled with hot sterile oil and the wound closed; (2) the cavity was packed with gauze, which was removed in twenty-four hours; (3) the cavity was packed with gauze sterilized in oil, which was removed twenty-four hours later (the purpose of this was to prevent the gauze adhering to the sides of the bone cavity and the subsequent oozing on its removal); (4) both ends of the cavity were filled with Morehof's bone wax; this caused very good hemostasis, and was used in the largest number of experiments. In one case a sac was made of the peritoneum covering the appendix. The peritoneum was stripped off and a purse-string suture applied around the opening of the peritoneum; the sac was then filled with salt solution and placed in the bone cavity, completely filling it. The idea was to prevent the cavity from filling with blood-clot, and with the hope that the sac would be absorbed.

After varying lengths of time the dogs were killed and the bones examined. The findings were as follows: Where the periosteum has been well stripped off the bone for a distance of several centimeters it is separated from it by serosanguinous fluid. Here the bone was apparently repaired from the medullary cavity by a framework of connective tissue, on which calcium salts have been deposited, forming osteoid tissue; there has also been a reparative process from the connective tissue of the Haversian canals at the sides of the bone incision. Where the bone has repaired under a definite fibrous connective-tissue capsule, which is continuous with periosteum and also adherent to the surrounding muscles. This connective tissue is apparently not different from other connective tissue, except that in immediate approximation to the newly forming bone there is a single layer of cells which are larger in shape and have nuclei that take a heavy stain. In places there is a metaplasia from the connective-tissue cells to these osteogenetic cells. In the process of repair in fractures by the output of callus there is a metaplasia from connective tissue which seems to arise from the surrounding tissues rather than being a direct continuation of the periosteum. There is also a direct metaplasia from a tissue closely resembling fibrocartilage into young bone.

In attempting to draw clinical deductions from these experiments in regard to transplantation of bone, Bancroft says it is reasonable to assume that the periosteum acts as a limiting membrane to the bone, tends to conserve its shape and to furnish its blood-supply. If the periosteum is stripped from the bone of the transplanted part, numerous thrombi will occur, in which the vessels enter the diaphysis; but if the periosteum is left attached, the blood-supply will probably be more quickly established through the vessels of the periosteum. If small pieces of bone are transplanted, it is obvious that Haversian canals must be cut in many directions, thus allowing easy ingress to the newly forming blood-vessels. The fragments also must receive a good blood-supply from the entire periphery. They grow in this case without the aid of periosteum.

11. **New Method of Gastric Testing.**—Rehfuss used a simple capsule which could be easily swallowed and withdrawn at any given interval. In this capsule substances were placed capable of indicating the condition of the gastric juice. The capsule was made of hard steel, plated with silver. It consists of two parts: the head, perforated to permit the passage of a small silk thread, and supplied with a screw thread, by which it is attached to the body. This is likewise perforated and slotted to permit of the greatest possible ingress of liquid. Rehfuss found the best possible base was one of agar-agar. It is best to use a 2.5 per cent. solution, as the addition of various coloring matters will soften it somewhat. Rehfuss used a 1 per cent. aqueous solution of Congo red and agar-agar jelly distinctly alkaline after it has cooled to 40 F.; the same solution added to hot agar-agar results in a precipitation of the dye.

Capillary tubes were prepared by drawing out ordinary glass tubing in the usual manner until the diameter approached 1.5 mm. These pipets were then kept ready for use, and when it was desired to perform a test they were simply plunged into the jelly, withdrawn, and a core of the substance remained in the tube. Pieces were then cut off, 8 mm. in length, and inserted in the capsule. The capsule was then given at any stage after a test meal or, after an ordinary meal, swallowed in the usual manner, with a little water, and allowed to remain in the stomach ten to fifteen minutes and then withdrawn, taking the precaution to tell the patient to swallow when the capsule reaches the root of the tongue. Rehfuss usually performs Mett's test *in vivo* by taking one of the capillary tubes, sucking up some fresh egg albumin, holding the pipet over a boiling-water bath for two minutes, which results in a softly coagulated albumin capable of showing peptic digestion. Rehfuss has been able to demonstrate the digestion of more than 1 mm. for either end in the course of an ordinary Ewald meal.

While experimenting with the Einhorn duodenal tube, Rehfuss became convinced that if the tip was modified it would be possible to obtain acceptable specimens of the gastric juice. The new tip is slotted instead of perforated, and the slots are so cut that their diameter is as great as the caliber of the rubber tubing, in that way assuring the more perfect aspiration of material. It is made of steel, or can be made of manganese bronze; is bulbous in shape, so as to be easily swallowed; weighs from 90 to 120 grains, depending on the extent of the slotting and when linked with the customary No. 8 French tubing will not only serve as a most acceptable duodenal tube, but finds an even greater field in the study of the gastric contents, capable of being left in the stomach for long intervals, and enabling one to make a fractional study of the gastric juice over the whole period of digestion. The weight is sufficient to permit rapid swallowing, at the same time assisting by gravity its passage through the duodenum.

13. **Valvular Heart Disease and Tuberculosis.**—In reviewing 1,300 consecutive case records of patients admitted to and treated at the North Reading State Sanatorium in the past three years, Burns found definite records of valvular heart disease in 288, or 17.53 per cent. Of the 605 female cases, 128, or 21.15 per cent., had cardiac disease, and of the 695 male cases, 100, or 14.3 per cent., were similarly complicated; of the former 74, or 57.8 per cent., were diagnosed as mitral regurgitation, 42, or 33.5 per cent., as mitral regurgitation and stenosis, and 12, or 9.3 per cent., as aortic regurgi-

tation, 3 of the latter having also aortic stenosis and 2 others of the 12 having mitral regurgitation with aortic regurgitation. Of the men, 65 had mitral regurgitation, and of these 65 there were 28 showing also mitral stenosis. Aortic regurgitation appeared in 24 records, and together with aortic stenosis in 6 cases. Five cases were recorded as "undetermined" in character, although noted as "valvular heart disease." Two of these were suggestive of tricuspid insufficiency according to the record, but no definite diagnosis as such was made.

Boston Medical and Surgical Journal

June 18, CLXX, No. 25, pp. 937-974

16 *Possible Factor in Production and Distribution of Edema. F. C. Shattuck, Boston.
17 *Simultaneous Occurrence and Interrelation of Exophthalmic Goiter and Tabes. H. Barkan, San Francisco.
18 Sterility in Male. J. D. Barney, Boston.
19 *Six Thousand Wassermann Tests for Syphilis Performed in Harvard Neuropathologic Testing Laboratory, 1913. E. E. Southard, Boston.
20 Cystitis—An Incomplete Diagnosis. B. Tenney, Boston.
21 *Extrapulmonary and Other Sounds Which May Lead to Errors in Diagnosis of Pulmonary Tuberculosis. J. B. Hawes, 2d, Boston.
22 Plea for Early Operation for Gall-Stones Based on Autopsy Records. J. C. Hubbard, Boston.

June 25, No. 26, pp. 977-1012

23 *Anal and Rectal Growths of Benign or Doubtful Character. T. C. Hill, Boston.
24 Back Pain and Its Diagnosis. H. Platt, Manchester, England.
25 *Vaccine Therapy of Typhoid. A. A. Hornor, Boston.
26 Function of Social Service of Psychopathic Hospital, Boston. M. C. Jarrett, Boston.

16. **Factor in Production and Distribution of Edema.**—The Bertillon system shows that by a sufficient number of accurate measurements any person can be distinguished from every other person. Even more remarkable proof of the individuality of the individual is afforded by the fact that no two persons have the same finger prints. Is it not at least possible, asks Shattuck, that analogous variations may exist in the texture of the tissues, of the organs, in the blood, or one or another of its constituents, which may be a factor in the distribution of edema? In the urticarias, perhaps especially the giant form, and in angioneurotic edemas, a nervous element must play an important part; but it would seem possible that individual peculiarity of tissue may play a part in the localization of the striking superficial changes.

17. **Occurrence and Interrelation of Exophthalmic Goiter and Tabes.**—Barkan cites 8 cases in which all the patients were afflicted at one and the same time with Basedow's disease and tabes. All but 1 showed a positive Wassermann reaction; all showed the cardinal symptoms of tabes; Argyll Robertson, absence of patellar or tendo achillis reflex; all but 2, Romberg's sign; 3 cases in addition to the cardinal symptoms, optic atrophy; 1 case, marked ataxia; 2 cases, distinct areas of paresthesia, 1, lancinating pains. Six of the 8 admit having lues. There can be no doubt that we are dealing with 8 tabetics. As a group they present just as typical picture of Basedow's disease. All show exophthalmos, a pulse varying from 95 to 120, and fine tremor of extended hands and tongue; a palpable and enlarged thyroid, though to slight degree in all but one; all complain of perspiration, or restlessness and nervousness. All show marked loss of weight. Two of his patients had been taking iodids and it is a question as to whether they belong to the type picture. They are instructive in another regard, however, to be referred to later. There is no case in which any one of the signs here ascribed to Basedow, or the combination of them in any case, could be counted as belonging to the tabes. This, however, in view of all the other signs and symptoms of Basedow's disease, can be safely reckoned as belonging to this latter.

The "time occurrence" of the two diseases, Barkan states, is an aspect of the combination on which Sattler has collected some interesting data. In the cases of Joffray, Barie, Sechehiere, P. Marie and Marinesco, the two were found coexistent at the first examination of the patient, who could not tell which group of symptoms had commenced first. In a second case Joffray and in one of Moebius', the symptoms of both appeared at the same time; in Moebius' case lightning pains, diplopia, tremor and tachycardia were all equally marked and had appeared at the same time; Argyll Robertson, optic atrophy, absence of patellar reflex, Romberg, exophthalmos and struma were found combined at the first examination. In the cases of Lewinek, Timotheef and Mannheim, and in one further case of Joffray the cardinal symptoms of tabes had existed for five years, to be followed by typical Basedow: in one case only was exophthalmos missing. In the further cases of Charcot, Moebius, Deliarde, Wiener, Cohen and Mannheim, Timotheef and Bernhardt, the Basedow antedated the tabes, but it is to be remembered in this connection that the Basedow symptoms are usually first noticed by the patient, incipient tabes being then found on examination. It is to be noted that in all the cases the specific infection occurred years ago, with the Basedow in all cases years after the infection, appearing in practically all cases shortly before, at the same time with, or shortly after, the symptoms of tabes. There is not a single case reported, in fact, in which the Basedow antedated the specific infection and in which in that case tabes-Basedow were found coexistent later, although in several cases struma had existed for years. One of Barkan's patients presented tabetic symptoms antedating the appearance of exophthalmos by eighteen years; one patient, tabetic symptoms antedating those of Basedow by five years; one patient had suffered from Basedow for two to three months previous to examination and at that time presented marked tabetic signs. Without question these have existed for a longer period. One patient states having noticed loss of feeling in the distribution of the ulnar nerve twelve to fifteen years ago, exophthalmos since eight years. One patient had had paralysis of the third nerve six years ago and had noted symptoms of Basedow in the last few months only. One patient had had diplopia a year ago and had noticed exophthalmos with loss of weight since four months. One patient had noticed the exophthalmos two years ago and was found to have objective marks of tabes, whose beginning must certainly be traced as far back as that. One patient had well-marked optic atrophy, had had diplopia six years ago, had had gastric crisis three years ago; her Basedow symptoms are of only a few months' duration.

19. **Wassermann Tests for Syphilis in Harvard Laboratory.**—Twenty-three per cent. of all sera examined in the Harvard Laboratory were positive, and since the cases are in many instances picked as likely to be positive, this percentage is doubtless much higher than the community's total percentage. Thirty-three per cent. of all cerebrospinal fluids examined were positive. Aside from its capacity to solve problems of individual diagnosis, Southard believes that the Wassermann method is obviously of such value to the community that a community Wassermann service might well be undertaken by a state agency such as Board of Insanity or the Board of Health.

21. **Sounds May Lead to Errors in Diagnosis of Tuberculosis.**—Muscle sounds, Hawes says, were a potential source of error in 9.2 per cent. of 250 cases studied by him. Such sounds occur, particularly in muscular persons of nervous temperament. These sounds can be lessened by quieting and calming the patient and by seeing that the examining room is sufficiently warm. Errors due to these sounds can be avoided only by great care and concentration on the part of the physician. Joint sounds, resembling râles and a potential source of error, occurred in 22 per cent. of this series. Errors due to this cause may be avoided by the procedure described in detail above, of making the patient "go through the motions of breathing without taking a breath." This should be done in every doubtful case. Tendon or bursal sounds, atelectatic râles or marginal sounds, Hawes thinks, ought to cause confusion or be sources of any mistakes in diagnosis.

23. **Anal and Rectal Growths of Benign or Doubtful Character.**—The vast majority of benign tumors of the rectum according to Hill are easily recognized. The two most

common varieties are the adenoid and the fibroid polyps. They may arise from any part of the rectum, but are generally found in the lower 2 inches. Their presence is generally undetected until the pedicle has stretched sufficiently for them to protrude at the anal orifice during defecation. When found, they should always be removed even if causing no discomfort and submitted to examination for possible malignancy. Operative removal is simple and in most cases can be done under local anesthesia. The growth should be hooked down with the finger or instruments and the pedicle infiltrated with a weak solution of cocain and clamped with a suitable pair of forceps as close as may be to its attachment to the rectal wall. A linen or silk ligature is next applied on the proximal side of the clamp, or, if broad, the pedicle is transfixed with it and it is tied in sections. The growth is then cut away on the distal side of the clamp, which is removed, and in due time the ligature sloughs away.

When more than one or two polypoid or semisessile growths present to the examining finger in the rectum, and particularly if they are rather higher than the zone of ordinary occurrence of single growths, and there is an associated history of diarrheal and mucoid discharges, Hill states, one must consider the possibility of multiple adenomata, a most serious condition, rarely or never met or diagnosed by most physicians. When the growths are numerous and close together the feeling is distinctly like malignancy, and only by means of the proctoscope or sigmoidoscope can a certain diagnosis be made. These growths may, and usually do, occupy the major portion of the large bowel, bleed easily and may be soft or dense according to the amount of contained glandular or fibrous structure. They are very prone to malignant degeneration, and because one tumor is removed and found not to have been so transformed, one had no right to infer that it has not occurred in others.

25. Vaccine Therapy of Typhoid.—One hundred and thirty-five cases of typhoid were studied by Hornor, comparing 40 cases in which vaccines were administered with 95 cases in which vaccines were not used. The 135 cases were treated alike save for the use of vaccines. The vaccine used was made by suspending in physiologic salt solution a twenty-four-hour agar slant growth of *Bacillus typhosus* and then killing the organisms by a thirty-minute exposure to a temperature of 56 C. The initial dose of the vaccine was ten million killed bacteria. The number of organisms injected was increased daily by ten million, being administered every afternoon for one week, then on alternate afternoons with a twenty million increase until the temperature remained normal for three days or patient had received 700 million dead bacilli. The average total number of organisms given each patient was 516 million.

The inoculations were intracuticular and were all accompanied by local reactions—or redness, induration, pain and tenderness. These appeared within twenty-four hours and lasted twelve to forty-eight hours. No systemic reactions were detected. The average duration of fever in uncomplicated cases treated with vaccines was 24.39 days; in uncomplicated cases not receiving vaccines was 23.08 days. The percentage of cases showing complications were: inoculated, 55; uninoculated, 50½; all cases, 51. The percentages of mortality were: of vaccinated cases, 10; of unvaccinated cases, 11½; of all cases, 11⅒. The duration of fever in uncomplicated cases was approximately the same whether the cases did or did not receive vaccines. Defervescence in the uncomplicated cases began usually on the third day after admission no matter whether vaccines were or were not administered. A more detailed study of the incidence and of the character of complications shows relapses occurring in 20 per cent. of inoculated cases in contrast to 11.5 per cent. of uninoculated cases; recrudescences in 17.5 per cent. of inoculated cases as against 28.4 per cent. of uninoculated cases; other complications in 37.5 per cent. of inoculated cases compared with 21 per cent. of uninoculated cases. The complications include hemorrhage, perforation, phlebitis, pneumonia, parotitis, tonsillitis, osteomyelitis, acute hallucinosis, Vincent's angina, and decubitus.

Four deaths occurred among patients treated with vaccines, the first death due to an intestinal perforation, after the fifth inoculation of vaccine and after patient had received a total of 150 million dead bacilli; the second death was due to septic parotitis developing during a relapse which began after three weeks without fever and after patient had received 880 million killed bacteria; the third death was due to an intestinal hemorrhage occurring on eighteenth day after patient's admission to the hospital and after he had received 530 million dead organisms; the fourth death was due to bronchopneumonia on patient's twenty-first day in hospital and after he had received 580 million killed typhoid bacilli. These deaths were obviously not due to complications extraneous to typhoid. The deaths occurring among the 95 cases not inoculated with dead typhoid bacilli were as follows: 4 pneumonia, 2 hemorrhage, 3 severity of the disease, 1 perforation, 1 alcoholism.

Bulletin of Medical and Chirurgical Faculty of Maryland, Baltimore

June, VI, No. 12, pp. 197-212

27 Surgical Repair of Blood-Vessels. J. S. Horsley, Richmond, Va.

Colorado Medicine, Denver

June, XI, No. 5, pp. 213-242

28 Surgical Treatment of Thoracic Empyema. C. E. Tennant, Denver.
29 Art of Obstetrics Among Primitive Peoples and Its Development Among Civilized Classes. C. B. Ingraham, Denver.
30 Acapnia—Its Relation to Anesthesia and Surgery. C. G. Parsons, Denver.
31 Anesthetization—Anesthetizer and Surgeon. R. L. Charles, Denver.

Delaware State Medical Journal, Wilmington

April, V, No. 5, pp. 1-26

32 Phylacogens in Every Day Work. W. Linn, Wilmington.

Georgia Medical Association Journal, Augusta

June, IV, No. 2, pp. 33-69

33 Some Work for Georgia Doctors. L. C. Allen, Hoschton.
34 Surgical Treatment of Goiter. E. G. Jones, Atlanta.
35 Means and Methods That Should Be Employed to Increase Longevity of Man. A. L. R. Avant, Savannah.
36 *Three Thousand Cases of Fever under Salicylate of Soda Treatment. B. P. Oliveros, Savannah.

36. Cases of Fever under Salicylate of Soda Treatment.—Oliveros believes that at least 75 per cent. of continued fever cases treated from the very beginning with salicylate of soda can be aborted in anywhere from six to fourteen days. His mode of procedure is like this: From the first day of seeing the case, for adults, 15-grain doses are given every two hours from 6 a. m. to 6 p. m. and continued from day to day. His idea in discontinuing the drug after the seventh dose is owing to the fact that with a longer continuation the patient becomes excitable and hallucinated, and passes a very restless night. In children he finds that in pushing the drug the doses have to be lessened on account of the depression and bad breathing which it causes. He has found it very rare to have a stomach refuse the drug; given with tincture cardamon or zinziberis it will stick about as well or better than anything else. Under the treatment that much-to-be-desired condition, a clean mouth and constantly soft tongue, is nearly always a present joy. There is an absence of delirium, a pleasant skin and a soft pulse. Where the temperature runs about 102 and sponging is necessary, the patient is in condition to thoroughly enjoy the mode of procedure. Any other drug as calomel, turpentine and salts, may be used when necessary without discontinuing the use of soda.

Journal of the Indiana State Medical Association, Fort Wayne

June, VII, No. 6, pp. 255-308

37 Visceroptosis: Symptomatology. J. C. Sexton, Rushville.
38 Id.: Roentgen Diagnosis. A. M. Cole, Indianapolis.
39 Id.: Medical Treatment. W. Schell, Terre Haute.
40 Id.: Surgical Treatment. E. Walker, Evansville.
41 Contact Points of Ophthalmology and Rhinology with General Medicine. T. Potter, Indianapolis.
42 Care and Treatment of Pneumonia. J. B. Maple, Shelburn.
43 Sanitary Laws. W. F. King, Indianapolis.

Journal-Lancet, Minneapolis

June 1, XXXIV, No. 11, pp. 289-319

44 Fractures in Neighborhood of Joints. J. B. Murphy, Chicago.
45 Brachial Plexus Anesthesia: Complete Local Anesthesia of Upper Extremity, Permitting of all Major Surgical Procedures. A. C. Strachauer, Minneapolis.
46 Carcinoma of Cecum and Appendix. G. Earl, St. Paul.
47 Case of Thoracic Aneurism without Physical Findings. H. S. Willson, Minneapolis.

June 15, No. 12, pp. 321-346

48 Cervical Ribs as Cause of Brachial Neuritis. A. S. Hamilton, Minneapolis.
49 Surgical Aspect of Cervical Ribs. A. A. Law, Minneapolis.
50 Intestinal Parasites of Minnesota. A. H. Sanford, Rochester.
51 *Case of Psoas Parvus Contraction. M. H. Cremer, Red Wing.

51. **Psoas Parvus Contraction.**—Cremer's patient, female, aged 27 years, was always well until Oct. 2, 1912, when, on arising in the morning she could not step on her left limb, owing to severe and continuous pain involving the anterior, posterior and internal surfaces of the left leg, and pain in the back and left inguinal region. The thigh was flexed and adducted. An examination could not be made owing to the extreme sensitiveness over the areas above mentioned.

After two days' rest the symptoms abated somewhat, and the patient walked into Cremer's office with a pronounced limp. On examination there seemed to be a fixed tumor in the left groin, apparently the size of a hen's egg. The limb thus always being flexed and adducted, any attempt at manipulation gave her excruciating pain. There was tenderness along the course of the sciatic nerve. A roentgenogram of the pelvis and body was taken, which showed the osseous system normal throughout. Extension was applied to the limb, but this aggravated rather than relieved the pain. On Oct. 25, 1912, an exploratory laparotomy was made, but Cremer was unable to find any pathologic condition. She left the institution ten days later, unimproved.

She then went to a mud-cure institution, in which she remained for a period of nine weeks, returning with the same train of symptoms as had existed since the onset of her trouble. Cremer again made a roentgenogram of the hip, spine, stomach and lower bowel, but could not define any lesion. The kidneys were normal; cystoscopy, negative; Wassermann, negative; blood, normal; tuberculin reaction, negative. It was a question of giving the patient sufficient comfort that she might meet her engagements rather than curing her of an ailment of which we had no knowledge. Excluding the various lesions which might cause the symptom complex, as, for instance, sciatica, Pott's disease, synovitis of the hip-joint, sacro-iliac disease, thrombosis of the lumbar cord and appendicitis, Cremer decided it must be a psoas contraction; an operation was done on December 26. The abdomen was opened in the midline below the umbilicus, going through the posterior peritoneum transversely, dividing the muscle tendon, the ends of which quickly separated for a distance of about 2 inches. The patient, when visited the following morning, had no pain in the limb and had had none since the operation. The limb was straight and not partially flexed as before, but freely movable without pain. She made an eventful recovery, leaving the hospital on the ninth day following the operation and soon assumed her regular vocation as saleswoman.

Lancet-Clinic, Cincinnati

June 13, CXI, No. 24, pp. 687-710

52 Exstrophy of Bladder. J. A. Johnston, Cincinnati.
53 Frederick Forchheimer—An Appreciation. O. Juettner, Cincinnati.
54 Thrombosis and Embolism—Series of Unusual Circulatory Accidents Occurring in Acute Infections. W. L. Bierring, Des Moines, Ia.

Laryngoscope, St. Louis

May, XXIV, No. 5, pp. 485-562

55 Roentgenoscopy of Nasal Sinuses. D. MacFarlan, Philadelphia.
56 Improved Method for Removing Posterior Tip of Inferior Turbinate. M. Lubman, New York.
57 Physiologic and Pathologic Relations on Eye and Accessory Sinuses of Nose. C. B. Wylie, Morgantown, W. Va.
58 Atrophic Rhinitis, Treatment with Scarlet Red. W. C. Wood, Philadelphia.
59 Surgery of Faucial Tonsil as It Relates to Functions of Tongue and Soft Palate in Production of Voice. G. Hudson-Makuen, Philadelphia.
60 Surgical Conditions of Jaw. H. S. Dunning, New York.
61 Unusual Laryngeal Tumor. Specimen. Curious Esophageal Experience. Skiagraph and Foreign Body. H. Arrowsmith, New York.
62 Broncho-Esophagoscopy. E. W. Carpenter, Greensville, S. C.
63 New Tonsil Hemostat. A. W. Watson, Philadelphia.
64 Universal Syringe for Ear, Nose and Throat. P. Schoonmaker, New York.
65 Two Modified Forceps. E. Amberg, Detroit.

Medical Record, New York

June 20; LXXXV, No. 25, pp. 1105-1150

66 Uric Acid Overproduction. W. H. Porter, New York.
67 Langerhansian Hormone, and Hormone Treatment of Diabetes. H. R. Harrower, London.
68 Treatment of Trifacial Neuralgia by Injection of Alcohol, into Gasserian Ganglion. C. D. Camp, Ann Arbor, Mich.
69 Injuries of Inner Ear. E. Amberg, Detroit.
70 *Medical Management of Exophthalmic Goiter. R. Abrahams, New York.
71 Wright's Solution: Substitute for Antiseptic Solutions. G. K. Dickinson, Jersey City, N. J.

June 27, No. 26, pp. 1151-1218

72 Service of Medicine to Civilization. V. C. Vaughan, Ann Arbor, Mich.
73 Splenectomy for Pernicious Anemia: Report of Case. W. Coleman and J. A. Hartwell, New York.
74 Primary Lupus of Larynx. E. Mayer, New York.
75 Arterial Hypertension. I. W. Ballard, Opelika, Ala.
76 Varix of Internal Saphenous Vein Resembling Strangulated Femoral Hernia. G. P. Coopernail, Bedford.

70. **Treatment of Exophthalmic Goiter.**—The ideal treatment of exophthalmic goiter, Abrahams states, is found in complete isolation, rest and freedom from every conceivable care and worry. With this treatment, no medicinal agents need be associated. The most distressing sign of the disease is the rapidity of the heart action. Abrahams finds that the tincture of strophanthus given in 5- or 10-minim doses, three time a day, is most useful to steady the heart. If strophanthus fails, the tincture of belladonna in the same dose is a good second best. The other distressing conditions in exophthalmic goiter are tremor and nervousness. These are very well controlled by ammonium bromid in doses of 20 grains three times a day; this need be given for a short time only, because when the strophanthus begins to act the nervousness subsides, as a good share of it results from the consciousness of a rapid and pounding heart. The lukewarm shower-bath is another means to allay tremor and nervousness. The bath also works well as a hypnotic. Iron is rarely indicated, an opiate never. Once in a great while, when the patient is much disturbed at night with frequent urination, 0.25 grain of codein taken at bedtime will mitigate that evil. The diet should be of the simplest kind. Tea and coffee should be forbidden. Abrahams has also used serums. Beebe's and the antithyroidin of Möbius with some good results.

Military Surgeon, Chicago

June, XXXIV, No. 6, pp. 501-607

77 Ambulance Company. F. T. Woodbury, U. S. Army.
78 Disposal of Wastes. A. Farenholt, U. S. Navy.
79 Fracture of Jaws. T. E. Carmody, Colo. N. G.

Missouri State Medical Association Journal, St. Louis

June, X, No. 12, pp. 447-502

80 Feeding of Sick Infant. F. C. Neff, Kansas City.
81 Neurologic Manifestations of Pernicious Anemia. F. M. Barnes, Jr., St. Louis.
82 Bacterial Vaccines and Theory of Their Use. W. G. Thompson, Holden.
83 Eclampsia. A. L. Gray, St. Joseph.
84 Fracture of Skull. Report of Two Cases. A. W. McArthur, Kansas City.
85 Legal Aspects of Medical Practice and Some Preferences in Particular to Eye work. J. S. Weaver, Kansas City.

New York Medical Journal

June 20, XCIX, No. 25, pp. 1217-1264

86 Scoliosis Clinic of Children's Hospital, Boston. J. W. Sever, Boston.
87 Determinants of Tabes. W. J. M. A. Maloney, New York.
88 Alien in Relation to Spread of Acute Infectious Disease. L. L. Williams, Ellis Island.

89 Antituberculosis Campaign. J. Rosenberg, Margaretsville and New York.
90 Erroneous Deductions from Tracheal Insufflation. R. C. Coburn, New York.
91 Identity of Lane Kink with Joseph Price Elbow. J. W. Kennedy, Philadelphia.
92 *Case of Idiopathic Splenomegaly; Splenectomy. A. E. Sellenings, New York.
93 Sources of Error in Wassermann Technic. C. T. Stone, New York.
94 Neosalvarsan in Concentrated Solution. J. Girsdansky, New York.
95 *Possible Solution of Mercury Bichlorid Problem. J. H. Heacock, New York.

June 27, No. 26, pp. 1265-1320

96 Service of Medicine to Civilization. V. C. Vaughan, Ann Arbor, Mich.
97 Cerebrospinal Fluid and Its Relation to Brain Tumors. C. H. Frazier, Philadelphia.
98 Liver in Acquired Syphilis. H. Brooks, New York.
99 Diagnostic Pitfalls in Mental Examination of Negroes. J. E. Lind, Washington, D. C.
100 Treatment of Whitlow: Later, Felon. B. Robinson, New York.
101 Auscultatory Inflation of Colon. J. H. Musser, Jr., Philadelphia.
102 Pituitary Extract in Obstetrics. G. L. Brodhead, New York.
103 Effect of New Regulation Restricting Sale of Bichlorid of Mercury. C. F. Pabst, New York.
104 Visit to Lourdes. H. L. Shively, New York.

92. **Idiopathic Splenomegaly.**—Sellenings cites the case of a man, 23 years old. Used alcohol occasionally; venereal history denied; no history of acute or chronic illness except present condition. At the age of one year he fell out of bed and to this circumstance was attributed the abdominal swelling, which gradually increased in size, causing increasing pain, to which he had become more or less tolerant. However, two weeks prior to date of admission, he began to experience severe and increasing pains in the epigastrium and left side of abdomen. These pains were paroxysmal at first, later becoming more severe and continuous, when he sent for an ambulance and came to the hospital. The patient was an anemic, poorly nourished adult; heart and lungs apparently normal. There were no lymph-node enlargements. The striking feature was a large solid tumor lying in the left side of the abdomen and extending from its dome to well below the umbilicus. The tumor anteriorly presented a distinct and sharp border. The liver was apparently not increased in size. There was no ascites. Veins of the abdomen were not prominent; no jaundice or pigmentation. A diagnosis of enlarged spleen with undetermined etiology was made. Examination of urine showed a trace of albumin. Von Pirquet test was positive; Wassermann was negative. Blood examination, July 5: Hemoglobin, 70 per cent.; red cells, 4,800,000; white cells, 8,000; polynuclears, 81 per cent.; lymphocytes, 17 per cent.; eosinophils, 2 per cent.

Operation for removal of the spleen was done July 22, under gas-ether anesthesia. On the second day following the operation the patient's temperature rose to 105 F., with a remission to 100.4 F. on the fourth day. On the fifth day it again rose to 105 F., but on the sixth day it began to decline. A superficial infection at the site of the drain delayed his discharge from the hospital until August 22. The pathologic report was: Marked chronic interstitial splenitis and perisplenitis. Blood examination two days after operation showed: red cells, 4,970,000; white cells, 9,200; polynuclears, 96 per cent.; lymphocytes, 3 per cent.; eosinophils, 1 per cent. On September 13 the patient was readmitted to the hospital, suffering from an anal abscess, which was evacuated. Following this the blood-picture was as follows: red calls, 4,850,000; white cells, 11,000; lymphocytes, 19 per cent.; polynuclears, 81 per cent.; hemoglobin, 72 per cent. In November, 1913, four months after operation, it was reported that the patient had gained 15 pounds.

95. **Bichlorid Problem.**—Heacock suggests that all bichlorid tablets be manufactured in coffin shape, each to be stamped with the word "poison" on upper and lower surfaces, and to be colored a jet black or an intense scarlet; and to be placed in dark colored bottles having spinous projections from their surfaces. The latter of itself has proved to arrest attention on the part of the prospective consumer. The label should have the usual red field with the word "poison" in white letters.

New York State Journal of Medicine

June, XIV, No. 6, pp. 289-338

105 Newer Methods of Treatment in Nervous and Mental Diseases. L. P. Clark, New York.
106 Relationship of General Practitioner to Surgeon. N. Jacobson, Syracuse.
107 *Infection with Bacillus Coli Communis, Complicating Pregnancy, Labor and Puerperal State: Its Medical and Surgical Treatment. E. P. Davis, Philadelphia.
108 Asphyxia Neonatorum and Its Sequelae. W. P. Manton, Detroit.
109 *Sterility in Women. W. E. Ford, Utica.
110 Obstetric Technic. R. L. Ellithrop, Gloversville.
111 Determination of Surgical Conditions of Stomach in Chronic Cases. W. A. Bastedo and L. T. LeWald, New York.
112 Importance of Urology in Women. H. D. Furniss, New York.
113 Should General Practitioner Take Part in Treatment of Gonococcus Infection? J. B. Clark, New York.
114 Landry's Paralysis and Its Relation to Acute Epidemic Poliomyelitis. E. A. Sharp, Buffalo.
115 Influence of Diet on Growth and Recurrence of Adenoids. F. Van der Bogert, Schenectady.

107 and 109. Abstracted in The Journal, May 30, pp. 1750 and 1751.

Northwest Medicine, Seattle, Wash.

June, VI, No. 6, pp. 155-188

116 Sacroiliac Traumatisms. C. R. McClure, Portland, Ore.
117 Fractures of Pelvis. Report of Cases. C. G. Sabin, Portland, Ore.
118 Useful Splint (Hacker) for Fracture of Upper End of Humerus. H. B. Thompson, Seattle.
119 Conclusions Reached after Twenty Years' Obstetric Practice Covering 2,108 Cases without Maternal Mortality. E. I. Rich, Ogden, Utah.
120 Impassable Contraction of Gravid Uterus, Report of one Case Verified by Cesarean Section. Dilatation of Stomach Recovery. E. J. Lawrence, Spokane.
121 Local Health Department. S. G. Paul, Salt Lake City.
122 Medical Inspection of Public Schools. E. A. Montague, Tacoma.
123 Cancer of Breast. J. W. Aird, Provo, Utah.
124 Treatment of Asiatic Cholera at San Lazaro Hospital. A. C. Garton, Manila, P. I.

Ohio State Medical Journal, Columbus

June, X, No. 6, pp. 327-390

125 What Are Practical Health Measures? Who Should Lead, and Why? O. Dowling, Shreveport, La.
126 *Pecancerous Conditions of Involuting Breast and Importance of Their Condition. J. W. Means and J. Forman, Columbus.
127 Scientific Aspect of Early Infantile Ocular Contagion. (Ophthalmia Neonatorum.) R. Sattler, Cincinnati.
128 Surgical and Postoperative Treatment of Empyema of Chest. L. G. Bowers, Dayton.

126. **Involuting Breast.**—The authors point out that both histologically and clinically abnormal involution bears a distinctly closer relation to carcinoma than mere coincidence, and should be regarded with more seriousness than has formerly been attributed to it. The following points seem to stand out preeminently: (1) The proliferating group of abnormal involution is frequently associated with cancer. In their series of twenty cases of cancer occurring in women past middle life, it is associated eight times, or 40 per cent. (2) The proliferating group of abnormal involution has connective tissue increase, blood-vessel obliteration and the consequent disturbed nutrition in common with other precancerous lesions. (3) The development of early malignant change cannot be detected from the clinical symptoms, hence; (4) the radical removal of the gland whenever the seat of this disease is indicated. (5) Examination and dissection of the axilla is demanded whenever the proliferation is at all marked. (6) The absolute necessity of the surgeon familiarizing himself with the gross sectional appearance and the need of cooperation between the laboratory and operating room.

Southern Medical Journal, Nashville, Tenn.

June, VII, No. 6, pp. 431-514

129 Management of Carbohydrates in Infant Feeding. L. W. Elias, Asheville, N. C.
130 Management of Proteids and Fats in Infant Feeding. A. W. Calloway, Asheville, N. C.
131 Chronic Splenic Anemia, Banti's Disease and Allied Conditions. J. B. McElroy, Memphis.
132 Treatment of Gastro-Intestinal Tract in Pellagra. C. C. Elebash, Selma, Ala.

133 Pellagra. R. E. Sylvester, Tylertown, Miss.
134 Rational Psychotherapy. R. S. Carroll, Asheville, N. C.
135 Negro, Public Health Problem. C. E. Terry, Jacksonville, Fla.
136 Postoperative Care of Abdominal Cases. G. C. Rodgers, Elkins, W. Va.
137 Unusual Cases. E. D. Holland, Hot Springs, Ark.
138 Nasal Tampon Treatment of Sinus Diseases and Ocular Complications. J. I. Dowling, Albany, N. Y.
139 Pellagra. J. E. Evans, Fulton, Ala.
140 Case of Diabetes Mellitus Showing Uncinaria Infection. W. W. Dinsmore and P. B. Moss, Montgomery, Ala.
141 Effects of Continued Use of Opiates on Human System. W. C. Ashworth, Greensboro, N. C.
142 Surgical Treatment of Goiter. J. R. Wathen, Louisville, Ky.
143 Galveston Autopsies. G. C. Kindley, Galveston, Tex.
144 Prevention of Deafness. J. B. Greene, Asheville, N. C.

FOREIGN

Titles marked with an asterisk (*) are abstracted below. Single case reports and trials of new drugs are usually omitted.

British Medical Journal, London

June 6, I, No. 2788, pp. 1221-1276

1 *Prophylactic Use of Sensitized Bacterial Vaccines in Puerperal Sepsis. S. T. Champtaloup.
2 *Treatment of Uterine Abscess by Sensitized Bacillus Proteus. W. Broughton-Alcock.
3 Excision of Bladder for Malignant Disease. C. A. Morton.
4 *Case of Ectopia Vesica in which Ureters Were Grafted Successfully into Rectum. T. Y. Simpson.
5 *Direct Intragastric Method of Treating Certain Ulcers of Stomach. J. L. Thomas.
6 Cholecystotomy in Lieu of Cholecystostomy in Certain Cases of Cholelithiasis. A. E. Maylard.
7 Urinary Diastase Test and Loewi's Reaction in Pancreatic Lesions. L. Humphry.
8 *Two Cases of Acidosis Terminating Chronic Myocardial Disease. C. Coombs.
9 Suppurating Hydatid of Crura of Diaphragm. J. Oliver.
10 Dyspareunia and Its Surgical Treatment. J. Phillips.
11 Identity of T. Rhodesiense with Trypanosome of Same Appearance Found in Game. W. Yorke and B. Blacklock.
12 Electrargol in Small-Pox and Plague. R. Denman.

June 13, No. 2789, pp. 1277-1336

13 Influence and Responsibilities of Medical Profession in Social Legislation and Administration. A. C. Farquharson.
14 Obstetric Medicine in Uganda. A. R. Cook.
15 Plea for Surgical Work in Cottage by Country Practitioner. J. E. Webb.
16 Place of Roentgen Rays in Treatment of Cancer. F. Fowler.
17 Small Outbreak of Epidemic Cerebrospinal Meningitis. J. M. Clarke and J. O. Symes.
18 Frey's Method of Anesthetizing Larynx. C. Yorke.
19 Gumma of Larynx Necessitating Tracheotomy. W. J. Harrison.
20 Rare Form of Lichen Ruber Planus. C. H. Cattle.

1. **Prophylactic Use of Sensitized Bacterial Vaccines.**—Champtaloup suggests that health departments issue sensitized streptococcal vaccines for prophylactic use in maternity practice. In view of the fact that 80 per cent. of cases of puerperal sepsis are due to streptococci, he thinks it would be well to use a stock sensitized polyvalent streptococcal vaccine as a prophylactic, in the face of an epidemic of puerperal infection, such as is sometimes witnessed in an institution, or in private practice in which the house surroundings are not of the best, or in which the practitioner has already recently attended a case which has gone septic. Champtaloup suggests that doses of 100, 250 and 500 million of this vaccine be given the expectant mother at forty-eight-hour intervals, ten to fourteen days before the expected date of confinement. The sensitized vaccine is preferable to the ordinary vaccine because of the absence of reaction and the more rapid immunization.

2. **Treatment of Uterine Abscess by Sensitized Bacilli Protei.**—A married woman aged 55 complained of a long-continued vaginal discharge of pus. Three years previously she had undergone subtotal hysterectomy for fibroma. For six months subsequent to this operation the patient had trouble with her bladder and then became subject to a vaginal discharge. On examination the vagina was found to be full of yellowish, thick, tenacious pus, without marked smell; it was seen to be exuding from the cervix, and a probe passed into the latter led into an abscess cavity a little under 1½ inches in diameter. Some pus withdrawn from this cavity was submitted after microscopic examination to culture, and colonies of pure *B. proteus* resulted. The first part of the treatment consisted in giving, at intervals of three or four days, seven injections of a culture of the bacilli derived from the pus; the doses gradually increased in amount, the first being equal to 100 million bacilli, and the last to 2,000 million. The bacilli were heated to 60 C. for an hour before administration. A very slight local and general reaction followed each injection.

On the eighth day after the last injection of these dead bacilli 20 c.cm. of blood was taken from the patient and used for the preparation of an autogenous vaccine consisting of living bacilli, sensitized by contact with the serum of the patient's blood, which was rich in amboceptor and specific agglutinating properties. At this date a vaginal examination was again made, and the abscess found to be still secreting, though in lessened quantity, pus containing the *B. proteus* in pure culture. On the tenth day after the last injection of dead bacilli injection of the sensitized autogenous vaccine was commenced, one injection being given weekly for four weeks, and the dose increased from 400 million at the beginning to 1,000 million at the end. Again very slight reactions followed the injections. At the same time the abscess cavity was washed out with a dilute antiseptic solution. By the time the fourth injection had been given the discharge of pus had entirely ceased, but to render the cure more secure four further injections were subsequently given.

4. **Ectopia Vesica in which Ureters were Grafted Successfully into Rectum.**—The subject of this report had ectopia vesicae. Urine was continually spurting in drops from the two ureteric openings, calcareous concretions had formed on the pubic hairs, she was unable to walk except for a short distance, and had to be wheeled about. Her clothing adhered to the protruding posterior bladder wall, causing pain and discomfort by rubbing on it and the concretions; slight hemorrhage also occurred at times. There was a urinous odor about her, and she was unable to attend school; she was fretful and irritable; the posterior bladder wall bulged like a large ventral hernia, and contained coils of intestine; the pubic symphysis was absent.

Simpson decided to transplant the ureters into the rectum and under a general anesthetic, he dissected up the posterior bladder wall from the peritoneum above and triangular ligament below. A catheter was inserted into each ureter, which was cleared for about 2 inches; the redundant portion of the bladder was removed except just around the ureters. Simpson next divided some fibrous tissue in the position of the hymen admitting the finger into the vagina, and then divided the triangular ligament, permitting the lower end of the ureters to be turned back into the vagina in close proximity to the anterior rectal wall. With a finger in the rectum an opening was made through the posterior vaginal and anterior rectal walls, and through this the catheters and ureters were placed; the free edges of the rectovaginal incision were sutured to the sides of the ureters, the triangular ligament, perineum and abdominal wounds were respectively drawn together with catgut. Urine was collected in a receptacle for seven days from the two catheters which protruded from the anus; they were then withdrawn, and the patient made an uninterrupted recovery. She is now able to retain her urine in the rectum for several hours at a time.

5. **Direct Intragastric Treatment of Ulcers of Stomach.**—The operation Thomas performed in one case was as follows: Scraping radially from the center of ulcer by Volkmann's spoon all the detachable unhealthy tissues as far as the under surface of the mucous membrane forming its edge. Thermocauterization of the exposed fresh base of the ulcer in order to stop hemorrhage completely and to sterilize. Mobilization of the mucous membrane all around the edge of the ulcer by means of a long blunt-pointed scissors curved on the flat and with a delicate end. Removal *par morcellement* by means of Lane's bone-nibbling forceps of all the unhealthy mucous membrane now forming the mobile edge of the ulcer. The edges of the healthy mucous membrane were brought together by means of suitable sutures—continuous or interrupted. The gastrotomy wound was closed by separate con-

tinuous suture for the mucous, muscular and serous layers. The abdominal wall was then closed. The result is a complete success.

8. **Acidosis Terminating Chronic Myocardial Disease.**—The first case cited by Coombs was one of cardiosclerosis. The symptoms which suggested the existence of an acidosis were the powerful smell of acetone in the breath; the incessant thirst; the type of dyspnea, which in its sighing, rhythmic character and its disproportionate intensity recalled the air-hunger of diabetic acidosis; and the nervous symptoms, of which delirium and pupillary contraction were the chief. In the second case a similar train of symptoms marked the last phase. There was the same strong smell of acetone, the same kind of breathlessness, and a similar set of nervous phenomena. To this was added an extraordinarily severe diarrhea. That this was toxic is suggested by its intensity, its intractability, and its independence of colic or other abdominal symptoms. Coombs suggests that it may have been the outcome of an effort on the part of the body to rid itself of poisonous substances.

To these toxic phenomena the term "acidosis" is applied by Coombs because of their resemblance in essentials to diabetic and other acid intoxications. The sweetish breath, the air-hunger and the cerebral aberrations all seem to set down the phenomena seen in this pair of cases among the acidoses. Two important divergences were noted—the almost complete absence of acetone and B-hydroxy acids from the urine, and the failure of alkalinization as a therapeutic measure. None of the commonly recognized causes of intoxication were operative in these two cases; in neither man was there any trace of glycosuria or any hint at a preexisting diabetes. Both patients were feeding adequately, neither was there any vomiting nor other cause of starvation, apart from the diarrhea which supervened in the second case after the symptoms of acidosis had been observed. No drug had been administered in either case, such as might have given rise to acid intoxication. It seems to Coombs, therefore, that these two cases represent an acidosis differing in origin and nature from those types which have been hitherto recognized.

Edinburgh Medical Journal

June, XII, No. 6, pp. 481-590

21 Urinary Antiseptics. (Hexamethylenetetramine.) J. W. T. Walker.
22 Hypertrophic Pulmonary Osteo-Arthropathy (Marie's Disease). A. Gilmour.
23 Royal College of Surgeons of Edinburgh: Their Professors of Surgery. C. H. Creswell.

Journal of State Medicine, London

June, XXII, No. 6, pp. 321-384

24 Sexual Disease and Individual. A. Corbett-Smith.
25 Occupational Fatigue. T. Oliver.
26 Housing of Irish Working Classes. R. F. Heron.

Journal of Tropical Medicine and Hygiene, London

June 1, XVII, No. 11, pp. 161-176

27 Emetin Treatment of Dysentery in Young Children. R. G. Archibald.
28 Recovery of Embryo of Filaria Bancrofti from Blood from Lung During Daytime. B. H. Dutcher.

Lancet, London

June 6, I, No. 4736, pp. 1589-1660

29 Some Effects Which Follow on Changes in Reaction of Blood. (To be continued.) F. G. Hopkins.
30 *Acute Pancreatitis. A. E. Barker.
31 *Use of Neosalvarsan in Active Pulmonary Tuberculosis. P. H.-S. Hartley.
32 Two Cases of Sprue Treated by Mouth Streptococcal Vaccines and Emetin Hydrochlorid Hypodermically. L. Rogers.
33 Congenital Deficiency of Radius and Homologous Condition in Leg. J. Fraser and H. H. Robarts.
34 Appendicitis Simulating Intussusception. R. E. Halahan.
35 Death Following Sting of Scorpion. R. McC. Linnell.

June 13, No. 4737, pp. 1616-1730

36 *Some Effects Which Follow on Changes in Reaction of Blood. (Concluded.) F. G. Hopkins.
37 Plea for Degenerate. T. C. Shaw.
38 *Aerial Conveyance of Infection. F. H. Thomson and C. Price.
39 *Experimental Production of Purpura in Animals. J. C. G. Ledingham.
40 Tuberculosis of Crus Cerebri Simulating Enteric Fever. F. E. Wynne.
41 Wassermann Reaction in Malaria. W. Fletcher.
42 *Effect of Gastric Pancreatic Ferments on Potency of Tincture of Digitalis. A. Goodall and H. S. Reid.
43 Traumatic Exfoliative Keratitis. P. A. Harry.

30. **Acute Pancreatitis.**—Three of Barker's patients described similar attacks at long intervals antecedent to that for which they sought surgical help. In one case there were two, one six years and one six months before the last; both after normal childbirth. In another case there was one attack nine months previously, described as quite similar to the last. It was not related to labor. In a third case the patient, male, described three illnesses of the same kind, the first five years before (in bed eleven weeks), the second four years before (in bed for three weeks) and the third three years before (for which he remained in bed one week). In the last of Barker's cases there was a history of very severe abdominal pain and shivering earlier in 1913, causing him to roll on the floor, and lasting some hours. In this case the sac of the omentum was empty, there was extensive fat necrosis in the retroperitoneal tissues but no sloughing at the moment of operation. This took place later. Another point noted as regards past history was that in two cases, there was much gastric trouble for some time previous to the attacks, and in one case the teeth were in very bad condition. A third patient was subjected to "frequent biliousness" before her attack.

In none of the cases was there anything in the history to suggest derangement of the biliary apparatus except doubtful jaundice in a previous attack in one case. Nor at the operations was anything wrong found in the gall-bladder. It was, however, of very great interest to note that at about the time when the exacerbation of symptoms followed by "fits" (tetany) came on (thirtieth day) the previously clear bile became turbid, and a considerable sediment of pus was found in the bottle for about a week. From the improvement which followed on this both in the general condition and the bile it seems clear that this pus found its way from the inflamed pancreas into the duct, then into the common duct, and thus into the gall-bladder. In one case there was no time for actual destructive change in or around the organ. The patient was killed outright by the shock of the onset in a few hours, and before any surgical relief could be undertaken.

The onset of the attack in all these cases was strikingly sudden except in one case in which four weeks "pain after food" elapsed before the condition was thought grave enough to call for admission into hospital. In the others, except for indefinite gastric disturbance, sudden severe pain in the epigastrium was the first and most prominent symptom. This was always described as very intense. The temperature in all cases was relatively low at the onset. The pulse was rapid and gradually increasing while losing tension. Vomiting was usual at the onset in these cases, not so prominent a feature later. The material brought up was usually bilious with mucus. In no case was a tumor found in the region of the pancreas without an anesthetic. In one case only was one discovered just before the operation when the anesthetic had been given.

On opening the abdomen turbid peritoneal fluid was found in three cases at operation (and in one case not operated on) in considerable amount. The intestines were injected and dilated in four out of the five cases operated on, but not paralyzed. They had not the appearance of being actually inflamed, their luster being unimpaired, and showing no lymph on them. But lymph was found in three cases in the neighborhood of the pancreas. From the character of the discharges coming from the inflamed gland there was only evidence of hemorrhage into or around it in three cases. The omental sac was opened in all the six cases operated on, but only in three had the destructive process made its way into it.

31. **Neosalvarsan in Pulmonary Tuberculosis.**—Of the sixteen cases in which Hartley has observed the effect of the drug, in one at least, that of a woman, aged 60, with extensive

pulmonary tuberculosis, two injections of neosalvarsan were given seemingly without effect. In another the beneficial effect was only temporary, and after a time pyrexia returned, though milder in degree. In others improvement resulted and the temperature became normal, the fall being a gradual one in some cases, but it has been difficult always to decide how far the result was due to the drug and how far to the rest in bed and favorable surroundiings to which phthisic patients may eventually respond even after a considerable period of pyrexia. Hartley says that the drug is not a specific, but it would appear to have the power of influencing very favorably certain cases of active and febrile tuberculous disease of the lungs which have resisted other treatment, and it merits, therefore, a more extended trial. If administered with care and with due precautions it may be given apparently without risk even in very advanced and grave forms of the disease.

36. **Changes in Reaction of Blood.**—The hydrogen ion concentration of the blood, Hopkins states, is a variable, but the interests of the body demand that its variations should be confined within a very narrow zone of change. In the maintenace of its mean value, which is such as to make the blood a very nearly neutral fluid, a great number of factors play a part—some chemical, some physiochemical, and others more purely physiologic. When appreciable variations occur they produce striking effects, especially on the mechanisms of respiration. Considerable departures from the normal indeed can only exist when the sensitivity of the respiratory center is simultaneously modified. In the tissues—at any rate in certain tissues—wider variations in the hydrogen ion concentration probably occur; but metabolic processes are nicely adjusted to the maintenance of approximate neutrality even in the tissues themselves. Any local change of reaction when it occurs may profoundly affect the general chemical equilibrium in a tissue of organ.

38. **Aerial Conveyance of Infection.**—As the result of experience, Thomson and Price assert that they could treat infectious diseases in one ward, almost certainly with perfect safety were they to select the day of the disease on which to admit them. They are in some doubt as to the conclusions to be deduced from their experience, but feel satisfied that the treatment of these diseases is more satisfactorily carried out in an open ward than in a cubicle ward—that is, rooms with incomplete partitions between the patients. It is open to perfect supervision, everything that is done can be seen by the staff. For the treatment of diseases when they are not conveyed by air, such a ward is also possibly better than box wards (rooms with complete partitions). The ward is a thoroughly well-ventilated one, and ample space is allowed for the patient.

Thomson and Price believe further that their evidence in the case of scarlet fever goes somewhat strongly to show that the infection is probably not air-borne. The evidence as to whooping-cough is less definite. The whooping-cough infections occurred in summer, when the ventilation was even more free than in winter. The infection of measles is probably air-borne early in the disease, but the power of infection soon passes. They are inclined to think that the infection of chicken-pox is air-borne early in the disease, but their experience goes to suggest that on and after the third day it is probably not air-borne. For many years they have held that diphtheria infection is not air-borne. No cross infection arose from German measles or from mumps.

39. **Production of Purpura in Animals.**—A condition resembling purpura and presenting other features of the hemorrhagic diathesis was produced by Ledingham in guinea-pigs by inoculation of an antiserum prepared by immunizing rabbits with guinea-pigs' blood-plates.

42. **Gastric and Pancreatic Ferments.**—The minimum lethal dose of samples of tincture of digitalis to frogs was ascertained by Goodall and Reid. Each sample was then kept in contact with a digestive ferment at body temperature for six hours and the minimum lethal dose was again determined. They found that the effect of pepsin in large quantity on the tincture of digitalis is comparatively slight. The effect of the pancreatic trypsin may be considerable, but it is doubtful whether tincture of digitalis given by the mouth ever comes much in contact with it. It is concluded that as tincture of digitalis is never likely to be subjected to such a severe digestive ordeal under the conditions in which it is administered therapeutically there is little likelihood of any loss of potency before it is absorbed.

Archives Mens. d'Obstét. et de Gynéc., Paris

May, III, No. 5, pp. 433-512

44 *Insufficiency of the Adrenals during Pregnancy. (Insuffisance surrénale dans la grossesse.) P. Zuloaga.
45 Retention of Membranes after Delivery at Term. Guildal.
46 Retention of Blood in Half of Double Uterus. P. Moiroud.
47 Postoperative Hernia. L. Imbert and D. Zwirn.

44. **Adrenal Insufficiency during Pregnancy.**—Zuloaga states that for nearly two years he has been treating the uncontrollable vomiting of pregnancy with epinephrin, and with complete success in a number of cases. Benefit can be anticipated only when the adrenals are functioning defectively. He gives the details of two extreme cases of this; the first patient was a woman of 25 whose adrenals had evidently been impaired by typhoid at 15; their functioning sufficed for ordinary conditions, but not to carry the woman through a pregnancy. By the second month uncontrollable vomiting, diarrhea, cold sweats, syncopes and nervous excitement suggested either acute poisoning, ruptured tubal pregnancy or acute peritonitis. The pulse was 145, tongue dry, respiration rapid and shallow and the blood-pressure low. Injection of caffein and saline was supplemented with 15 drops of epinephrin and ice to the abdomen. Improvement followed at once. In seeking for McBurney's point to exclude appendicitis, Zuloaga noticed that a persisting white line was left wherever his finger had been drawn along the skin. This recalled Sergent's statement that a persisting white line of this kind is pathognomonic of adrenal insufficiency, and Zuloaga therefore continued the epinephrin systematically, 10 drops every eight hours. All symptoms subsided and the pulse and blood-pressure returned to normal. The epinephrin was suspended after a month and the woman began to vomit anew, so that the epinephrin was resumed and she took 5 drops every twelve hours until her normal delivery. The second case was less severe and on a milk-vegetable diet and 5 drops of epinephrin every twelve hours the woman was tided along until delivery. During the latter months he alternated two weeks of the epinephrin with two weeks of calcium glycerophosphate. The "white streak" disappeared in all the cases under the influence of the epinephrin. In another group of cases the adrenal insufficiency did not cause trouble until the puerperium.

Bulletin de l'Académie de Médecine, Paris

LXXVIII, Nos. 21-22, pp. 701-754

48 Conjunctivitis with Pigmentation. (Encore sur un cas de chromidrose.) R. Blanchard.
49 Antityphoid Vaccination of Personnel of Paris Hospitals. Mesureur.
50 *Adrenal Tumor in Woman Accompanied by Development of Male Characters. (Le virilisme surrénal.) T. Tuffier.
51 *Color-Serodiagnosis of Cerebral Hemorrhage. P. Marie and A. Léri.
52 *Fatal Tetanus from Felt in Orthopedic Appliance; Two Cases. E. Kirmisson.
53 Peritoneal Complications of Scarlet Fever. P. Teissier.
54 *Paralysis from Long Use of Colchicin. A. Souques.
55 Vaccination against Tuberculosis. (Du rôle de la tuberculine dans la vaccination antituberculeuse.) A. Jousset.

50. See Paris Letter, June 20, p. 1978.

51. **Serodiagnosis of Cerebral Hemorrhage.**—Marie and Léri noticed that certain serums were greenish and more or less fluorescent and found in each case that the serum came from a patient with cerebral or meningeal hemorrhage. In three other patients with symptoms suggesting cerebral hemorrhage, but which proved to be softening of brain and no hemorrhage, there was no greenish tint to the serum, as also with serum from a hundred patients without hemor-

rhage. It was noticed in some cases the same day as the hemorrhage and it persisted in some up to the fifth or seventh day. This chromoserodiagnosis may apply to internal hemorrhage at any point.

52. **Tetanus from Felt in Orthopedic Appliance.**—See Paris Letter, July 4, p. 44.

54. **Paralysis from Colchicin in Self Medication.**—Souques relates that a robust man of 50 was subject about once a year to attacks of acute gout. Last November fearing that an attack was impending he began to take a proprietary remedy for gout, corresponding to a total of 34 mg. of colchicin, with 6 to 8 teaspoonfuls of Laville's liquid (said to contain colocynthin, quinin and cinchonin with calcium salts, in wine)—all in the course of nineteen days. Diarrhea came on, and abdominal pains but he still kept up his medicine. The nineteenth day paralysis developed in the hand and in twelve days had become complete, except for the head. It was accompanied at first by anesthesia of the feet and intense pains in the deep muscles. It persisted this way for a month and then rapidly improved. There was no mental disturbance at any time nor symptoms on the part of the heart, bladder or rectum, no albuminuria and no fever. Some muscular weakness and tenderness findings persist to date, six months after the first symptoms. Fatal poisoning from colchicin has been known with doses of 0.03 gm. and even with 0.003 gm.; the outcome depends mainly on the functional capacity of the kidneys. Diarrhea should warn to suspend the drug.

Bulletins de la Société de Pédiatrie, Paris

May 5, XVI, No. 5, pp. 241-326

56 *Chronic Appendicitis and Inguinal Hernia. V. Veau.
57 Heliotherapy in Surgical Tuberculosis. A. Trèves.
58 Recovery from Meningitis under Antiparameningococcus Serum; Two Infants. M. Delort and J. Stiassnie.
59 *The Blood-Dust in Infants' Serum. (Etude des hèmoconies chez les nourissons.) Nobécourt and A. Maillet.

56. **Appendicitis and Inguinal Hernia.**—Veau has had operations for this combination of chronic appendicitis and hernia done on fifty-three children in his service. When a child complains of pains from an inguinal hernia or undescended testicle, appendicitis should always be suspected. Neither hernia nor undescended testicles cause pain as a rule. He prefers to operate separately on the hernia and the appendix except in quite small children outside of an acute stage.

59. **Blood-Dust in Infants' Serum as Basis for Prognosis.**—Nobécourt and Maillet conclude from their study of the hemoconiae in the blood-serum of forty-two infants that a large proportion is generally but not always a favorable sign; a progressive reduction in their numbers or their constant absence from the serum is a bad sign.

Presse Médicale, Paris

XXII, Nos. 44-45, pp. 421-436

60 Umbilical Fistula Symptomatic of Tuberculous Process in Pubis. E. Kirmisson.
61 Colloidal Sulphur in Therapeutics. A. Martinet.
62 *Decompressive Trephining on Sound Side for Intracranial Hemorrhage. (Le coma dans l'hémorrhagie cérébrale.) P. Marie and M. L. Kindberg.
63 Congenital Disease of the Heart. (Pathogénie des affections congénitales du cœur.) M. Letulle.

62. **Trephining on Sound Side for Intracranial Hemorrhage.**—Marie and Kindberg remark that total coma is scarcely ever encountered except with intracranial hemorrhage. Complete unconsciousness can be due only to pressure on both hemispheres; the blood accumulated on one side pushes the hemisphere over on the sound side, and thus both suffer from the pressure, and total coma results. They give illustrations of the findings in the brain in a number of typical cases showing that total coma does not appear unless the sound hemisphere is compressed by the other being pushed over on it. This pressure can be relieved by making an extensive opening in the skull on the sound side. This is a harmless measure in comparison to the dangers in operating on the focus of the hemorrhage. It opens up only sound tissue while the hemorrhagic focus itself is left unmolested and further hemorrhage is not invited by any reduction of the pressure on the focus itself. The trephining can be done without general anesthesia and it may not be necessary to incise the dura.

Revue de Gynécologie, Paris

April, XXII, No. 4, pp. 273-368

64 The Conservative Tendency in Operative Treatment of Uterine Myomas. W. Falgowski.
65 Adenomas of the Umbilicus. M. Guibé.
66 Abdominal Wounds in the Field. (Les blessures de guerre de l'abdomen.) O. Laurent.

Revue Pratique d'Obstét. et de Gyn., Paris

May, XXII, No. 5, pp. 129-156

67 Abscess in Uterine Wall. (Les collections suppurées de la paroi utérine.) J. Roy.
68 Ovarian Cyst in Two Children. F. Potvin.
69 *Ovariectomy for Uterine Hemorrhage. (Valeur actuelle de la castration ovarienne dans les hémorrhagies des fibro-myomes.) de Rouville.

69. **Ovariectomy for Uterine Hemorrhage.**—De Rouville has removed both ovaries in seven cases for the purpose of arresting hemorrhage from fibromyomas in the uterus. In one case a scrap of ovary tissue was inadvertently left and this was enough to keep up the tendency to hemorrhages. Nothing of the kind occurred in any of the other cases. He was not able to detect any reduction in the size of the myomas but they lost their disposition to bleed after the ovaries were removed.

Semaine Médicale, Paris

June 10, XXXIV, No. 23, pp. 265-276

70 Operative Treatment for Incontinence of Urine and Genital Prolapse. R. de Bovis.

Archiv für klinische Chirurgie, Berlin

May 22, CIV, No. 3, pp. 581-842. Last indexed June 9, p. 1849

71 *Origin of Loose Bodies in Joints and Their Connection with Deforming Arthritis. G. Axhausen.
72 Chondroma in Joint Capsule. (Gelenkkapselchondrome.) A. Troell.
73 *Jejunal Ulcer. (Zur Kasuistik und chirurgischen Therapie des peptischen Jejunalgeschwürs.) K. Schwarz.
74 Experiences with Appendicectomy, 1898-1913; 641 Cases; Mortality 5.4 per cent. Zahradnicky.
75 Perinephritis from Perforation by Kidney Calculus; Three Cases. (Paranephritis durch Nierensteinperforation.) A. Hahn.
76 Splenectomy for Cystic Disease; Recovery. (Zur Kasuistik der Milzcysten.) H. Fossler.
77 *Ileosigmoidostomy for Intractable Constipation; Two Cases. E. Ruge.
78 *Value of Tuberculin Focal Reaction in Diagnosis of Puzzling Hip-Joint Disease. (Tuberkulinherdreaktion für die Diagnose unklarer Hüftgelenkserkrankungen.) W. Keppler and F. Erkes.
79 Actinomycosis of Shoulder Compelling Exarticulation. (Zur Entstehung der Aktinomykose.) W. Keppler.

71. **Treatment and Prevention of Loose Bodies in Joints.**—Axhausen devotes nearly a hundred pages to a discussion of the causes of deforming arthritis in the knee and describes eight typical cases with numerous illustrations. His plea is that trauma of some kind — known or ignored — is responsible for injury of the cartilage-covered surface of the femur near the space between the condyles and the rear surface of the patella. This injury is the source of the loose bodies in the knee-joint, and readily explains a large proportion of the cases of deforming arthritis in the young, even when no trauma is known. The practical conclusion is the necessity for operating to ward off the deforming arthritis when the course of the case shows that healing is not complete after the usual interval, or there are recurring pains and effusion. The joint injured is easily opened up through a lengthwise incision at the side of the patella, excising into sound tissue all abnormal cartilage showing fissures, softening or roughness or separation of the fibers.

73. **Jejunal Ulcer.**—Schwarz reports 10 cases and compares them with 146 on record. In only 80 of the total number of cases of peptic ulceration in the jejunum given operative treatment was improvement realized, and in a large number

of these too short an interval had elapsed for a decisive judgment as to the outcome. In 25 cases the ulcer had entailed diffuse peritonitis by perforation; an operation was done in 9 cases, saving 7; 18 died. In 4 cases peritonitis followed without perforation; one patient was saved by evacuating a subphrenic abscess. In 53 cases the ulcer had eaten its way into the abdominal wall and 7 died notwithstanding one or more operations. The outcome is not known in most of the others. He had 7 of this type in his own 10 cases and cured 6 of them. In 27 other cases the ulcer invaded the chest wall, mesentery, liver or colon.

In prophylaxis he emphasizes that a peptic ulcer does not develop except where there is gastric juice which has not been "paralyzed" by the antipeptic protecting substance. In applying gastro-enterostomy provision must be made for a sufficient area of mucosa to supply an adequate amount of the protecting substance. When he encounters a recurring peptic ulcer following an anterior gastro-enterostomy, he closes it up, resects all morbid tissue and makes a new, posterior opening. Even much debilitated patients bore the operation surprisingly well and seem to be permanently cured. In the total 146 cases the age of the patients ranged from 2 months to 70 years; only 19 were women. He adds that he has also encountered a case of primary jejunal ulcer in a boy of 10.

77. **Operative Treatment of Intractable Constipation.**—Ruge describes a method of short-circuiting the bowel by an end-to-end ileosigmoidostomy, with a fascia strip thrown around the sigmoid flexure just above the junction and drawn merely tight enough to bring the mucosa walls together.

78. **Importance of Focal Tuberculin Reaction in Diagnosis of Hip-Joint Disease.**—Keppler and Erkes write from the university clinic at Berlin in charge of Bier to call attention to the characteristic changes in the focus after injection of 0.1 or 1 mg. of tuberculin in puzzling cases of hip-joint disease. This focal reaction develops in from six to twelve hours after the injection and usually lasts for a day or two. A positive focal reaction was obtained in 16 of the 41 cases of hip-joint disease tested, and the course confirmed the non-tuberculous nature of the trouble in the 25 negative cases.

Beiträge zur klinischen Chirurgie, Tübingen

XC, No. 2, pp. 247-514

80 *Compression of Tuberculous Lung by Extrapleural Filling. (Behandlung der Lungentuberkulose mit extrapleuraler Plombierung.) Sauerbruch.
81 Roentgenoscopic Diagnosis for Mechanical Treatment of Pulmonary Tuberculosis. H. Staub.
82 Pathologic-Anatomic Bases for Surgical Treatment of Pulmonary Tuberculosis. W. Jehn.
83 Modification of Serologic Reaction of the Blood after Extrapleural Thoracoplastics. T. Naegeli.
84 Roentgenologic Control of Action of Phrenicotomy. H. E. Walther.
85 Experimental Research on Intrathoracic Surgery of the Lungs. K. Henschen.
86 Trendelenburg's Operation for Pulmonary Embolism; Survival for Fifty Hours. Schumacher.
87 Traumatic Rupture of Mediastinal Pleura; Two Cases. (Ruptur des hinteren Mittelfells.) H. Freysz.
88 Transverse Resection of Larynx and Esophagus. W. Schelbert.
89 *Frequency of Secondary Gastric Cancer with Gastric Ulcer. A. Billeter.
90 Retroperitoneal Rupture of the Duodenum. R. Keller.
91 Steeple Skull. (Zur Pathologie des Turmschädels.) T. Herzog.
92 Atrophy of the Prostate with Stenosis. J. Dubs.

80. **Mechanical Treatment of Pulmonary Tuberculosis.**—Sauerbruch expatiates on the advantages of combining several mechanical measures to ensure the compression of the diseased lung. A paraffin total filling had to be removed in one case, but the patient recovered after an extensive plastic operation on that side of the chest. Two other patients given the paraffin filling had certain disturbances, but not sufficient to call for removal of the filling.

89. **Secondary Gastric Cancer after Ulcer.**—All the thirteen articles of the *Beiträge* issue from the university surgical clinic at Zurich in charge of Sauerbruch. Billeter here reports the present condition of 116 patients out of 125 given operative treatment for gastric ulcer in the thirteen years before 1910. His data demonstrate that among these 116 patients a secondary cancer has developed during all these years only in one.

Berliner klinische Wochenschrift

June 1, LI, No. 22, pp. 1013-1060

93 Modern Methods of Studying the Physiology of the Brain. (Hirnphysiologie.) W. Trendelenburg.
94 *Influence of Muscular Exercise on Sugar and Lactic-Acid Content of the Blood. (Einfluss der Muskelarbeit auf den Gehalt des Blutes an Zucker und Milchsäure.) L. Lichtwitz.
95 *Action of Altitudes on the Perception and Will Power of Aviators. (Wirkung der Höhe auf das Seelenleben des Luftfahrers.) A. Loewy and S. Placzek.
96 *Feeding by Duodenal Tube. (Duodenalernährung.) E. Reuss.
97 *Influence of Spleen on Red-Corpuscle Production. (Einfluss der Milz auf die erythroplastische Tatigkeit des Knochenmarks.) H. Hirschfeld and A. Weinert.
98 Mechanism of Oxidation Processes in Animal Organism. L. Stern.
99 *Friedmann's Remedy. (Erfahrungen über die Behandlung der chirurgischen Tuberkulose mit F. F. Friedmann's Heil- und Schutzmittel.) F. Karewski. Concluded in No. 23. (Das F. F. Friedmann'sche Heil- und Schutzmittel zur Bekämpfung der Tuberkulose.) P. Wichmann.

June 8, No. 23, pp. 1061-1108

100 *The Prognosis in Morphin Addiction. H. König.
101 Changes in Tissues and Tumors after Radiotherapy. (Veränderungen der Gewebe und der Geschwülste nach Strahlenbehandlung.) D. V. Hansemann.
102 Duodenal Ulcer. F. H. v. Tappeiner.
103 Erysipelas of Anemia Type. E. v. Czyhlarz.
104 Intra-Uterine Forceps. K. Neuwirth.
105 Psychic Research. (Zur Kritik des Hellsehens, der Ahnungen und des Gedankenlesens, sowie der denkenden Tiere u. a.) R. Meyer.

94. **Influence of Muscular Exercise on the Sugar Content of the Blood.**—Lichtwitz gives the details of the technic and findings in regard to the changes in the sugar and lactic-acid content of the blood in seven healthy persons and twelve patients exercising with the ergostat until fatigued. He recommends the method as useful to test whether a diabetic is favorably or unfavorably influenced by exercise, and the amount he can stand without harm.

95. **The Psychic Factors in Aviation.**—Loewy and Placzek report a series of tests of the attention and other psychic phenomena on themselves and two others in a cabinet with an atmospheric pressure corresponding to that of an altitude of 4,000 meters. The objective findings were comparatively slight although mistakes in doing sums were more frequent the more rarefied the air. But the sensation of being incapable of giving close attention, of being unable to act promptly and with precision—these subjective factors were pronounced, and even a subjective sensation of the kind has always more or less of a paralyzing effect and may serve to explain some of the fatalities to aviators for which the machines were not responsible. The effects in these tests were the more significant as the subjects were quiet, warm and free from responsibility in the pneumatic cabinet. Compare this with the condition of the aviator, they remark, the rapid changes in altitude causing physical disturbances and weakening the will power while the wind makes it hard to breathe and chills the surface, and finally paralyzes the peripheral vessels so that the blood pours into them and the brain, etc., become anemic. They think that the death of Chavez, for instance, was due to these causes as he strove to break the altitude record. They warn aviators against high altitudes and urge them to train themselves to bear abrupt changes in atmospheric pressure.

96. **Feeding through the Duodenal Tube.**—Reuss says that this method of feeding has solved the problem of nourishing the patient while leaving the stomach at rest, and reports the metabolic findings showing the excellent utilization of the food thus supplied. He gives mostly milk and cream with sugar and sometimes a sweet wine, commencing with small amounts, but by the end of the week reaching the full ration. As the stomach is always empty of food, drugs act on an ulcer more effectually, and he thinks duodenal feeding should be given a thorough trial before operating for rebellious gastric ulcer. He never witnessed any injury from the tube in his four cases, all women but one.

97. **Influence of Splenectomy on Blood-Production.**—Hirschfeld and Weinert had opportunity to study the red-corpuscle production after splenectomy in fifteen cases and found that it had a marked influence on the appearance of Jolly bodies. There is evidently some close connection between the spleen and these bodies, and their behavior in anemias should receive more attention.

99. **Friedmann's Remedy for Tuberculosis.**—Karewski states that he applied Friedmann's remedy only to patients who did not need local measures at the time, and thus only in the cases with a more favorable prognosis—a total of fifty cases of surgical tuberculosis. With the exception of one case, no manifest improvement was evident in any instance while the reactions were severe in a number of cases, chills, temperature up to 41.1 C. (106 F.), fever for days, vomiting, and in five cases delirium. Some patients lost flesh, one 3 pounds in five days, and a number felt sick for a long time afterward. One patient developed a pyemic condition, involving previously sound joints, with pneumonia. The remedy, as marketed, he declares, is thus a dangerous preparation (*ein gefährliches Mittel*). The one patient whose condition improved was a robust young woman with a tuberculous process in the wrist which improved after three injections of the remedy and complete rest for nearly four months. He compares the improvement in this case with the cure in another similar case under mere fixation and exposure to the sunshine without further measures, the patient weakly and with an apical process besides. No other patient displayed any lasting improvement from Friedmann's remedy; and judging from his experience, he remarks, no other method of treatment has so little benefit to show as Friedmann's. It does not ward off recurrence, it is not a tonic, it does not confer immunity, and it is not harmless.

Wichmann's seven patients with lupus were given the treatment by Friedmann himself. Reactions with chills, fever to 40.5 C. (105 F.) and general malaise were numerous. Wichmann says that his experience shows that the remedy is liable to activate and spread an existing tuberculosis; that any protecting action on its part against tuberculosis has not been demonstrated in any instance, but that a curative action from it is possible. In four of his seven patients the condition became permanently much worse after the injections, the disease being evidently activated and invading new territory.

[In the same number of the *Wochenschrift*, among the society transactions, Steinitz reported twenty cases of pulmonary tuberculosis; no benefit and no manifest injury, although in some cases the possibility of an unfavorable influence was suggested. He adds that the absence in his cases of the disagreeable byeffects mentioned by all the other Berlin physicians who have reported on the remedy may be due to the fact that he made a point of injecting the remedy the same day it was received. He, like Karewski, had tuberculous mastitis develop in one case about three months after the intravenous injection. He reiterated in conclusion that the remedy cannot be called free from danger for all cases.

Brühann of Osterburg and Isaac reported a favorable influence from the remedy in their cases of lupus; the former in seven, the latter in nine cases of lupus. Brühann stated that in none of his fifty-five cases, including forty-eight of pulmonary tuberculosis, was any harm from the remedy observed, while Isaac emphasized that the remedy has an unmistakable action on lupus and on verrucous tuberculosis of the skin, but in no case was there an actual cure. One girl reacted with temperature of 42 C. (107.6 F.) and hemorrhage in the kidney, and another lost considerable flesh and grew very weak, suffering for a long time from these aftereffects of the remedy.]

100. **Prognosis with Morphin Addiction.**—König emphasizes that the outlook naturally varies according as the addiction was acquired in connection with a chronic painful affection such as tabes, neuralgia or peritoneal adhesions, or with single periods of pain, such as gallstone colic, or in connection with periods of melancholy or insomnia. He reviews his experience with 28 cases, demonstrating a successful outcome in over 50 per cent. of the 14 in the gall-stone group. The treatment required from three to ten months in these cases.

Deutsche medizinische Wochenschrift, Berlin

June 11, XL, No. 24, pp. 1201-1248

106 *Treatment of Acute Miliary Tuberculosis. Grober.
107 Sterilization of Vaccines with Ultraviolet Rays. (Neue Methode, Vakzine ohne Zusatz von Desinfizientien unter Erhaltung der Virulenz keimfrei zu machen.) E. Friedberger and E. Mironescu.
108 *Roentgenography of Liver, Spleen and Diaphragm. (Röntgenphotographie der Leber, der Milz und des Zwerchfells.) E. Rautenberg.
109 *Pancreas Disturbance Secondary to Disease of Stomach or Bile Apparatus. (Pankreasachylie und akute Pankreatitis.) A. Schmidt.
110 *Duodenal Ulcer. H. Kümmell. Commenced in No. 23.
111 *Passive Transmission* of Protective Ferments. (Passive Uebertragung der sog. Abwehrfermente.) A. E. Lampé.
112 Cholesterol as Factor in Arteriosclerosis. (Bedeutung des erhöhten Cholesteringehaltes für die Entstehung der Aortenatherosklerose.) N. Anitschkow.
113 **Experiments on Guinea-Pigs with Friedmann's Remedy.* (Tierversuche mit den Bazillen des Friedmannschen Tuberkuloseheilmittels.) E. Baumann.
114 Capillary Aspiration of Ascites. (Kapillarpunktion des Ascites.) Buth.
115 *Asynchronism of Ventricle Functioning.* S. La Franca.
116 Urease (Soy Bean Extract) as Test for Urea in Body Fluids. (Darstellung fester Urease und ihre Verwendung zur quantitativen Bestimmung von Harnstoff im Harn, Blut und in der Zerebrospinalflüssigkeit.) *D. D. van Slyke, G. Zacharias* and G. E. Cullen (New York).
117 Colloidal Gold as Reagent in Serodiagnosis. (Kolloidale Goldlösung als Reagens für die A. R.) J. Matzkiewitsch.

106. **Acute Miliary Tuberculosis.**—Grober emphasizes the importance of symptomatic measures and means to maintain the patient's strength with nourishing, appetizing food. He knows of a case in which the disease lasted for seven months, with two such pronounced remissions that they amounted to a temporary clinical cure.

108. **Oxygen as Aid in Roentgenoscopy of the Liver, Spleen and Diaphragm.**—Rautenberg relates that after tapping patients with ascites he injected from 1 to 6 liters of oxygen, after which it was easy to outline the liver, spleen and diaphragm with the Roentgen rays and show adhesions. The procedure is facilitated by examining the patient both erect and reclining on his left side, after thorough evacuation of the bowels. Without ascites the technic is similar to that with induced pneumothorax.

109. **Pancreatic Disturbances.**—Schmidt seeks to differentiate between defective secretion in the pancreas and acute inflammation, reporting typical cases of each. With pancreas achylia, the stools show the characteristic findings. The mild form of acute pancreatitis has in addition the stormy onset with pains, slight rise in temperature and steatorrhea with much free fat acids, while the creatorrhea is less pronounced than with functional disturbances alone. The lack of hydrochloric acid—the most powerful stimulant for trypsin production—explains the findings with gastric achylia, while disturbance in the biliary apparatus modifies the bile—the most powerful stimulant for the other pancreas ferments.

110. **Duodenal Ulcer.**—Kümmell compares duodenal ulcer with appendicitis, stating that a complete spontaneous cure is as little liable with one as with the other. The tendency to spontaneous healing is much less than with gastric ulcers. In his sixty-five operations for duodenal ulcer he always made a posterior gastro-enterostomy, with one exception, and threw a ligature around the pylorus. He generally used for this a strip of the ligamentum teres. Two patients succumbed to postoperative pneumonia; the others seem to have been permanently cured by th[illegible]tion, omitt[illegible] from the record fifteen patients with [illegible]itoniti[illegible] perforated ulcer when first seen.

113. **Friedmann's Remedy.**—B[illegible]orts [illegible] therapeutic application of Friedm[illegible] nin[illegible] pigs previously infected with hu[illegible] ba[illegible] tened the fatal outcom[illegible] of [illegible] He [illegible] the bacilli from the s[illegible]n [illegible] Fri[illegible]

remedy centrifugated without opening. The bacilli from the sediment in their response to the usual tests seemed to stand midway between human and cold-blooded animals' tubercle bacilli. They grew luxuriantly and the guinea-pigs were inoculated with an eight-day culture of this strain. The eight controls survived considerably longer than those thus treated. These experiences do not harmonize with Friedmann's statement in 1903 that "by preliminary treatment in the way of isopathic self-immunization he succeeded in conferring quite a high degree of protective immunity on the most susceptible of our laboratory animals, the guinea-pig, against a following virulent infection with human tubercle bacilli."

Münchener medizinische Wochenschrift, Berlin

June 2, LXI, No. 22, pp. 1209-1264

118 Further Research on Protective Ferments. (Das Verhalten von Tieren, die plasmafremde Substrate nebst den zugehörigen Fermenten resp. nur erstere allein im Blute besitzen, gegenüber der parenteralen Zufuhr bestimmter Peptone, Proteine und Serumarten.) E. Abderhalden and L. Grigorescu. (Zur Frage der Spezifität und klinischen Brauchbarkeit der Abderhaldenschen Reaktion.) F. M. Betz and Others.
119 *Potassium Permanganate Reaction in Pathologic Cerebrospinal Fluid. P. Boveri.
120 *Lange's Colloidal Gold Reaction in Cerebrospinal Fluid. (Die Goldsolreaktion im Liquor cerebrospinalis.) M. de Crinis and E. Frank.
121 *Carbohydrates in Diabetic Diet. (Die gemischte Amylazeenkur bei Diabetes mellitus.) W. Falta.
122 Clinical Importance of Roentgenoscopic Outline of Heart. (Herzsilhouette.) R. Geigel.
123 Salvarsan and Neosalvarsan in Office Practice. K. Rühl.
124 Radiotherapy of Cancer. (Probleme der Krebsbehandlung im Zeichen der Radiotherapy.) F. König.
125 Operation versus Radiotherapy. C. Müller.
126 Local Anesthetic to Combat Photophobia with Conjunctivitis. (Lichtscheu bei Conjunctivitis ekzematosa.) H. Peterka.
127 Inward Prolapse of Lining of Lower Intestine. (Innere Prolapszustände der Schleimhaut der Flexura sigmoidea und des Rektums.) A. Reizenstein.
128 Toxic By-Effects of Embarim. G. Merzbach.
129 Tonsillectomy. (Plastische Variation bei der extrakapsulären Totalexstirpation der Tonsille.) G. Trautmann.
130 To Prevent Breakage of Cover-Glasses. (Verhutung des Bruches beim Deckgläschenreinigen.) Böttcher.
131 The State Orthopedic Clinic at Munich. F. Lange.

June 9, No. 23, pp. 1265-1320

132 *Gastric Ulcer Result of Erosion from Trypsin. B. Stuber.
133 *Pathology of Nephritis and Functional Diagnosis. H. Machwitz, M. Rosenberg and J. Tschertkoff.
134 Sources of Error in Radioscopy of the Heart. (Fehlerquellen der klinischen Herzgrössenbestimmung.) E. Müller.
135 *The Luetin Test in Syphilis. (Luetinreaktion nach Noguchi.) J. N. Muscel, C. A. Dersca and L. Friedmann.
136 Traces of Blood in Tissues Used for Serodiagnosis a Source of Error. (Abderhaldensche Fermentreaktion.) W. Lahm.
137 *Diet Which Keeps Urine Alkaline Wards Off Joint Trouble. (Entstehung der Arthritis.) R. Berg.
138 Symptoms from Congenital Dilatation of Duodenum. A. Schmidt and A. Ohly.
139 *Treatment of Pernicious Anemia. H. Flörcken.
140 Scorbutus in German Africa. (Zur Skorbutätiologie.) E. Scherer.
141 Peritonsillar Abscess. Levinger.
142 Differentiation of Soft Chancre and Primary Lesion of Syphilis. (Ulcus molle oder Primäraffekt.) H. Müller.

119. **Color Reaction in Cerebrospinal Fluid.**—Boveri writes from Milan to call attention to the decoloration which occurs in a pathologic cerebrospinal fluid when 1 c.c. of a 0.1 per thousand solution of potassium permanganate is poured into a small test-tube containing 1 c.c. of the fluid being examined. There is a zonal reaction at the point of contact, but the global reaction when the tube is shaken is more distinct. The fluid turns a bright yellow while it retains its pinkish-violet tint unmodified if the fluid is normal. The findings with this test harmonized constantly with those of the Nonne, Noguchi and other tests, but it seems to be much more sensitive than these others.

120. **The Colloidal Gold Reaction in Cerebrospinal Fluid.**—De Crinis and Frank report their experience with Lange's gold test. It confirms, they say, that this test is by far the most sensitive of all methods for detecting pathologic changes in the fluid. They obtained constantly positive results in 120 cases of paresis, tabes or brain and spinal syphilis, even when the findings were negative with other tests in some of the cases. The findings were positive also in all their 4 cases of multiple sclerosis, 2 of chorea and 2 of purulent meningitis, but were constantly negative in 19 healthy controls and in 1 case of acute poliomyelitis.

121. **Mixed Starch Diet in Diabetes.**—Falta tabulates the details of the diet, the sugar and ketone output and weight in four severe cases of diabetes to emphasize the importance of excluding from the diet all forms of animal albumin while carbohydrates can be taken in the form of different starches, either entirely as gruels or partly in bread or crackers. This means excluding all meat, eggs, cheese and milk, and interposition of "vegetable days" or "fasting days." The benefit from a diet on these principles is not striking at first, but it gradually leads to permanent improvement. Fasting for even half a day may aid materially. Eight of his twenty diabetic patients treated on these principles were between 12 and 25. Some had such intense acidosis that a tendency to comatous conditions developed when the diet was restricted too rigorously.

132. **Trypsin Responsible for Gastric Ulcer.**—Stuber announces that trypsin getting into the stomach is the cause of the digestion of the stomach wall which we know as gastric ulcer. He induced insufficiency of the pylorus in five dogs, permitting reflux of intestinal juices. While a variety of control tests always gave negative findings, there was constantly ulceration in the stomach when conditions were realized which guaranteed an increased and frequent reflux of intestinal ferments into the stomach. When the pancreas was shut off no ulceration occurred unless trypsin was fed by the mouth, when ulceration followed inevitably. Gastric ulcer is hence a tryptic ulcer, he declares; the causal insufficiency of the pylorus in clinical cases may be of purely nervous origin. The old idea that hyperchlorhydria must necessarily precede the gastric ulcer has been shown to be erroneous by the number of cases that have been recorded recently with subnormal or total lack of gastric secretion; the hyperchlorhydria is more likely to be a secondary phenomenon.

133. **Tests of Kidney Functioning.**—Of all the various methods of estimating the functional capacity of the kidneys, Machwitz and his coworkers think that the amount of retention of nitrogen is by far the most instructive. It is an index of the functioning of the vascular system in the kidneys. In chronic nephritis it therefore serves to reveal the degree of insufficiency of this apparatus. The iodin and lactose tests they regard as of very little aid for either treatment, diagnosis or prognosis. Estimation of the retention of salt is important for treatment but not from the other standpoints, but tests for the elimination of water and for the power of concentration of the urine are instructive as to the presence or absence of insufficiency in the chronic vascular forms of nephritis and sclerosis.

135. **The Luetin Reaction in Syphilis.**—This communication from Bucharest states that the luetin test applied to 62 syphilitics and 93 patients with other diseases gave positive reactions in 89 per cent. of the cases of syphilis in the tertiary phase, in 20 per cent. of the cases of tabes, in 47 per cent. of the secondary phase cases and in only 2 per cent. of the supposedly non-syphilis cases.

Comparison with the Wassermann test showed the luetin positive in 2 cases of secondary syphilis in which the Wasserman was negative while in the tertiary phase there were 12 cases in which the Wassermann was negative and the luetin positive out of the total 37 in this stage. These findings suggest, they say, that luetin is the more sensitive and reliable test in syphilis in the third stage or in a latent form.

137. **Origin and Prevention of Arthritis.**—Berg theorizes and then presents concrete examples to demonstrate the possibility of warding off gout and other joint diseases in many instances by a rational diet. By this he means a diet which reduces the production of uric acid. The potency of the diet in this respect can be estimated by the reaction of the urine to neutral tincture of litmus. With a suitable diet the urine will turn the litmus solution blue while the reaction will be acid on an unsuitable diet. This indicates

that an excess of uric acid is being produced and that the urine is being oversaturated with the uric acid. There is no precipitation of phosphates and carbonates in urine giving an alkaline reaction under normal conditions, and the putrefying properties of the urine seem less. He thinks there is reason to assume that the endogenous production of uric acid can thus be kept within normal bounds with care as to diet. The so-called exogenous production of uric acid is far more likely to be almost exclusively of endogenous origin from abnormal secretion of digestive juices in response to unsuitable food.

139. **Pernicious Anemia.**—Flörcken reports four cases of pernicious anemia which demonstrate that thorium X may have a pronounced beneficial action for a time, inducing prolonged remissions. No cure was realized and in one of his cases the thorium seemed to aggravate the condition. Splenectomy was done as a last resort in one case but the patient died within an hour. In the fourth case, after a remission of four months had been induced under thorium, the spleen was removed on return of symptoms and the man has been in apparent health during the seven months to date; the hemoglobin increased from 10 to 40 per cent. and the reds are in normal numbers, with no megaloblasts or normoblasts and only slight poikilocytosis and very few Jolly bodies. The spleen in both cases was only moderately enlarged and no special changes could be found with the microscope. Direct transfusion of blood gave but transient benefit in the two cases in which it was applied.

Zentralblatt für Chirurgie, Leipsic

May 30, XLI, No. 22, pp. 929-968

143 Osteoplastic Bone Flap from Vertebral Process. (Osteoplastische Knochenlappenbildung aus den Dornfortsätzen der Wirbelsäule.) Borchard.
144 *Symptom of Fracture of the Patella. L. Dreyer.

June 6, No. 23, pp. 969-1016

145 Diverticulum Developing in Stomach from Peptic Ulcer; Two Cases. K. Borszeky.
146 Infectious Diseases as Factor in Varices. D. G. Zesas.

144. **Symptoms of Fracture of Patella with Intact Muscle Apparatus.**—Dreyer illustrates a case to show the possibility of differentiating between cases which can be treated conservatively and those for which an operation will probably be required sooner or later. Roentgenoscopy ten days after the fracture showed a gap of 1 cm. and the man was totally unable to extend his knee. The fracture was treated by extension applied to the thigh alone, and it was found that the patient was then able to lift up his leg. If the weight was removed he could not do this at all. It was evident, therefore, that the supposed laceration of the stretching apparatus did not exist in fact, and was only simulated. Treatment therefore was conservative and the cure was soon complete. Dreyer advocates the extension bandage even when an operation is necessary, declaring that it protects better than plaster or splints against the tearing out of the suture.

Zentralblatt für Gynäkologie, Leipsic

May 30, XXXVIII, No. 22, pp. 793-832

147 Shape of Fetal Skull with Contracted Pelvis. (In der Schwangerschaft konfigurierte Schädel bei engem Becken.) Walcher, Jr.
148 Silver Salt in Salve Vehicle for Roentgenoscopic Diagnosis of Uterine Tumors. S. Stiassny.
149 Case of Pregnancy Neuritis. (Polyneuritis gravidarum.) A. Farani.

June 6, No. 23, pp. 833-964

150 Improved Technic for Watching over Sponges at Laparotomies. (Verfahren zur Kontrolle der Tupfer bei Laparotomien.) P. v. Kubinyi.

Gazzetta degli Ospedali e delle Cliniche, Milan

XXXV, Nos. 65-68, pp. 681-728

151 Lipoid Substances in the Blood-Corpuscles. (Ricerche istochimiche sulle sostanze lipoidi degli elementi morfologici del sangue.) N. Barbaro.
152 *Hydrocele as First Symptom of Polyserositis or Other Disease. (Sull'importanza prognostica dell'idrocele idiopatico e circa la tubercolosi del sacco erniario.) N. Federici.
153 Severe and Rebellious "Sciatica" Cured by Removal of Subfascial Lipoma in the Foot. R. Casali.
154 Psychoses in Course of Malta Fever. A. Cantani.

152. **Hydrocele as Sign of General Disease.**—Federici called attention fourteen years ago to a case in which pleurisy with effusion followed on the heels of a hydrocele and polyserositis on the pleurisy. A so-called idiopathic hydrocele may prove the primary manifestation of tuberculosis, so that he urges the importance of testing for tuberculosis in every case of hydrocele of obscure origin. A tuberculous process in a hernial sac also comes into this same category of possible primary manifestations of unsuspected or latent tuberculosis.

Policlinico, Rome

May 24, XXI, No. 21, pp. 741-776

155 Phlebitis in Malta Fever; Two Cases. A. Cantani.

May 31, No. 22, pp. 777-812

156 Influence of Bile Pigments and Heat on the Urochromogen Reaction. (Influenza dei pigmenti biliari e del riscaldamento sulla reazione di Moriz Weisz.) S. Valbusa.
157 The Conditional Reflexes. (Nuovi orizzonti per lo studio dei fenomeni neuro-psichici.) Dragotti.

Riforma Medica, Naples

May 30, XX, No. 22, pp. 589-616

158 Experimental Study of Effect of Tobacco Smoke on Animals. (Sull azione del fumo di tabacco comune e attenuato di nicotina.) C. Carginale.
159 Unusual Symptoms and Complications of Malta Fever. A. Cantani.

St. Peterburger medizinische Zeitschrift

April 28, XXXIX, No. 8, pp. 97-110

160 *Radium in Treatment of Uterine Cancer. T. Dobbert.
161 Malignant Granuloma; Nine Cases. A. Bertels.
162 Induced Pneumothorax. E. Zimmermann.

160. **Radium for Uterine Cancer.**—Dobbert reports 44 cases and gives the details of a typical case out of each variety of cancer. The prompt subsidence of the pain after one or two applications of the radium is a remarkable feature of the treatment. The patients are no longer kept awake by the pain, and they begin to improve at once. A subfebrile rise in temperature is common, and chills were occasionally observed, with other signs of severe intoxication. Symptoms of irritation on the part of rectum and bladder were frequently noted; in a few rare instances the patients became nervous and sleepless. In one inoperable case the infiltration entirely disappeared and in 5 it subsided materially, the cancer becoming operable in two. In 3 cases no change could be detected, and in 4 the cancer became aggravated.

Hospitalstidende, Copenhagen

June 3, LVII, No. 22, pp. 705-736

163 Serodiagnosis of Pregnancy. (Abderhaldens Reaktion.) S. Kjærgaard. Commenced in No. 21.

Norsk Magazin for Lægevidenskaben, Christiania

June, LXXV, No. 6, pp. 649-744

164 Osteomyelitis Developing after Trauma. (Osteomyelit som følge av ulykkestilfælde.) P. Bull.
165 History of Anthrax Bacillus. (Miltbrandbacillens opdagelse.) O. Malm.
166 Tuberculous Peritonitis without Clinical Manifestations. S. Widerøe.
167 Ileus from Stenosis of Splenic Flexure; Two Cases. S. Widerøe.
168 *Retroplacental Hemorrhage with Normally Situated Placenta. (Retroplacentær blødning.) K. Brandt.

168. **Retroplacental Hemorrhage.**—Brandt's patient was a primipara of 30 and the hemorrhage from premature separation of the normally situated placenta was so serious that cesarean section had to be done at once. The uterine wall was the seat of hemorrhages similar to those encountered in the liver with eclampsia. He gives the details of fourteen other cases all terminating favorably for the mother, but ten of the children died; in some of the cases the pregnancy was only at the thirty-second week.

Ugeskrift for Læger, Copenhagen

May 21, LXXVI, No. 21, pp. 971-996

169 Idiosyncrasy to Milk in Young Infants. (Komælksidiosynkrasi hos spæde Børn.) P. Hertz.
170 Negative Results of Electrophoresis in Attempt to Eradicate Diphtheria Bacilli from Tonsils. J. R. Kragh.

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A CASE OF ILIOFEMORAL ANEURYSM EXEMPLIFYING THE VALUE OF THE PRELIMINARY PARTIAL OCCLUSION OF AN ARTERY IN THE TREATMENT OF ANEURYSM

WILLIAM S. HALSTED, M.D.
BALTIMORE

Excision of an iliofemoral aneurysm three weeks after preliminary partial occlusion of the external iliac artery.—Surgical No. 31928. W. C., colored man, aged 40, admitted to the Johns Hopkins Hospital April 10, 1913. Eleven months before admission, patient noticed a dull pain on stooping and found a small, pulsating lump in the left groin which has steadily increased in size. Five months ago the limb began to swell.

Examination.—The patient is a tall, muscular, robust negro. The thorax is negative except for a systolic blow over lower left interscapular region. Superficial blood-vessels are sclerotic. Blood-pressure is 130. The abdomen is distended; there are tortuous superficial veins over left abdomen, and edema of the skin to the level of the twelfth rib. Over the aorta, which seems unusually large, a distinct bruit is heard. The left leg is enormously swollen from groin to toe, and so hard that even on forcible pressure there is barely a suggestion of pitting. The entire thigh seems to throb with each pulsation, and the skin of the whole extremity is very much darker than on the opposite side. In the region of the groin is a great pulsating expansile swelling which extends from near the symphysis pubis to the anterior superior spine of the ilium, and from a line joining the iliac spines of the two sides to a point about 10 cm. below Poupart's ligament. The precise outlines of the aneurysm cannot be determined, on account of the great swelling all about it, except above, where it terminates quite abruptly. A thrill is felt over the tumor and a bruit can be heard from the abdominal aorta down to a point about 15 cm. below Poupart's ligament.

The measurements of the extremities are as follows:

	Right cm.	Left cm.
Thigh at level of gluteal fold.........	48.5	63
Knee, across patella....................	33.5	45
Calf of leg, 15 cm. below knee-joint...	31.5	40.5
Ankle, 2 cm. above internal malleolus..	20	26.5

Wassermann is positive.

Believing that the danger of gangrene in this case would be unusually great either from ligation of the external iliac artery, from excision of the sac, or from the Matas endoaneurysmorrhaphy, indeed, from any method which would suddenly cure the aneurysm, except possibly vessel transplantation, I decided to make a preliminary partial occlusion of the external iliac artery.

First Operation.—Partial occlusion of the left external iliac artery with an aluminum band. May 21, 1913: The artery was readily found. It was abnormally large, very deeply situated and ran from behind forward instead of from above downward. The vessel was freed with two long blunt dissectors and lifted from its bed with two tapes, between which the aluminum band was curled about it. With the thumb and finger the band was rolled (tightened) until a thrill could be distinctly felt in the artery below it. The band was again rolled—tight enough this time to obliterate the thrill in the artery and the pulsation in the aneurysm. A very faint, hardly perceptible pulse could still be felt in the external iliac artery between the band and the aneurysm. Thus the vessel had been occluded to precisely the desired amount. The foot immediately became quite cold. Had the artery been totally occluded gangrene might have resulted.

After closure of the wound a faint bruit, now confined to an area not over 4 cm. in diameter, could be heard just below Poupart's ligament. There was no appreciable pulsation in the aneurysm.

May 22 (twenty-four hours after operation): Circulation in foot has improved. Patient can move toes and ankle freely. He has had some pain in the leg. During the night the toes were numb and insensitive to touch.

May 23: The swelling of the limb has decreased. The thrill extends higher over the aneurysm and along the course of the external iliac artery than before the operation. The band is probably responsible for this.

I may remark here that the thrill has been an important guide to us in the conduction of our experimental and clinical work, for it indicates quite accurately the degree of constriction which has been attained. In the histories of our experiments we read, "Artery has been constricted to the thrill-point," or "thrill-points passed but pulse perceptible," or "thrill and pulse obliterated but lumen of vessel not completely closed."

May 25: Patient is free from pain. Sensation and temperature of the limb are normal. A previously much-dilated tributary to the long saphenous vein is no longer visible. There is a suspicion of pulsation in the aneurysm.

June 6: The swelling of the limb has steadily decreased since the operation. There is a very faint but definite pulsation in the aneurysm.

Second Operation.—Excision of the aneurysm. June 7: The skin having been disinfected with alcohol and tincture of iodin, the entire field of operation including scrotum, penis, abdomen, gluteal region and anterior surface and sides of thigh were covered with a layer of very thin linen soaked in celloidin. A long vertical incision was made through the dried celloidin and linen over the greatest convexity of the aneurysm. Before resorting to temporary occlusion of the common iliac artery an attempt was made to enucleate the sac to the extent which might prove feasible (1) in the hope that it might be unnecessary to complicate the operation by the dissection of the common iliac and (2) because I wished to note the condition of the circulation in the anastomotic vessels as well as in the femoral vein and artery. The tissues over and about the aneurysm seemed to be abnormally vascular, many more clamps than usual being required to control the bleeding. Two large, flattened and apparently obliterated veins lay over the inner part of the sac. The epigastric and external iliac vessels had been dissected out and tied, and the enucleation of the sac, above and at the sides, bloodlessly executed, when I decided that much time would be saved by making temporary compression of the common iliac. This vessel was exposed by cutting upward over the left rectus muscle in the line of the scar of the original incision. A broad tape was wound twice around the common iliac, twisted until the artery was occluded, and the twist maintained by a clamp.

The aneurysm was found to terminate below in a broad funnel from the inner and posterior side of which a large artery, presumably the profunda, was given off. Just below the funnel-shaped dilatation of the femoral, this artery was divided between two ligatures and the sac dissected out from below upward. A cord-like structure, later supposed to be the femoral vein, was cut across and dissected up with the sac. The external iliac artery, without change in its size, plunged abruptly into the sac at the upper part of its posterior surface. The aneurysm was then split longitudinally from one end to the other and the clots rapidly evacuated. The wall was perfectly dry, not a single bleeding point being [illegible]. The sac was found to extend deeply into the pelvis. undoubtedly, had pressed on the internal iliac vessels and *their branches. The further liberation of the sac* was very easily and swiftly carried out, not a single vessel being divided except by the final stroke of the knife which severed the proximal end of the external iliac vein. This vessel having been occluded and cut through in its peripheral part was not definitely identified until redivided. Altogether the operation was carried out in a bloodless manner.

The sutured wound was 45 cm. in length. It was closed without drainage except for one short cigaret of gutta-percha tissue. A silver-foil dressing was applied. After the operation the left foot and leg up to the knee were distinctly cooler than the right. A difference in the temperature of the two legs was observable until the fifth day.

On recovery from the anesthesia the patient could move the toes and ankle freely. He stated that his foot felt numb, but he could locate accurately pin-pricks at every point except along the inner margin of the nail of the great toe, and could readily distinguish heat from cold.

June 11: First dressing. Wound healed throughout by first intention except for the drainage opening. Patient has been remarkably comfortable, requiring no morphin since the operation. The swelling throughout the entire limb has greatly decreased. There has been no distention of the abdomen, notwithstanding the transperitoneal exposure of the common iliac artery.

July 16 (nine days after operation): Patient has been walking about for several days. He states that his leg is absolutely comfortable and rapidly gaining in strength. The entire limb is soft and quite natural. The circumference of the thigh measures 11 cm. less than before operation. Elsewhere the swelling has decreased proportionately.

November, 1913: Patient writes enthusiastically of his present condition. He states that he observes no sign of swelling or loss of power or sensation in the left leg, and that he is able to do a hard day's work without unusual fatigue.

I have cited this case at such length because it seems to me to demonstrate quite convincingly that the employment of the metal band was not without avail. One might well perhaps allow a longer time for the establishment of the collateral circulation, but in this instance it was not possible to do so as I was to sail for Europe two days after the second operation.

1201 Eutaw Place.

A Simple Equation.—If manure breeds flies and flies kill babies, what does the man do who maintains the manure pile on his premises?—*Bull. Chicago School Sanit. Instr.*

THE ABSORPTION OF EPINEPHRIN FROM THE NASAL SUBMUCOSA [*]

J. D. PILCHER, M.D.
CLEVELAND

Dr. W. B. Chamberlain called attention to the unusually pronounced vascular effects occasionally obtained from the injection of epinephrin and cocain into the nasal submucosa in nasal operations. After the application of cocain and epinephrin to the mucosa to render the parts anesthetic and anemic, one or two tablets of novocain, 1/6 grain, and epinephrin, 1/400 grain, dissolved in 5 c.c. of water are injected into the submucous tissue. The observations noted were cardiac irregularity with occasional decrease in the pulse-rate to 40 or 50 per minute; the blood-pressure was not determined. These phenomena suggested that the nasal submucosa must be an unusually good absorbing surface, since neither epinephrin nor cocain produces these marked effects on hypodermic or even intramuscular injection. Since this is of both practical and scientific interest, I have here confirmed it, at the suggestion of Sollmann, in the following manner:

METHODS

The epinephrin was injected into the submucosa of the nasal septum and anterior turbinals of fifteen dogs under anesthesia; the blood-pressure was recorded from the carotid artery. The usual dose of the drug was 1/20 c.c. of the 1:1,000 solution per kilogram of animal; sometimes a little more or less was given. About forty injections were made. Inasmuch as the turbinals in dogs are quite prominent, the injections were made into the anterior part of the septum and turbinals only, and at times somewhat blindly; but as the vascular effect of the injections was obtained so frequently, a more elaborate technic was thought to be unnecessary.

THE VASCULAR EFFECT

Following about one-half of the injections (twenty-one of about forty), there was a striking rise in blood-pressure; the mean rise in all injections was 50 mm. of mercury, with extremes of 10 and 160 mm. (see tracing). In three experiments the maximal pressure attained was over 200 mm. (265, 238, 215 mm.). The pressure may rise quite promptly, reaching the maximal level in not more than thirty seconds and returning to the normal level within from two to four minutes. This effect is practically the same as that obtained from the rapid intravenous administration. In a somewhat larger number of experiments the pressure rose more gradually, attaining a lower maximum in one or two minutes, remaining at this level briefly and gradually falling to the normal; in one experiment the normal level was not reached until nine minutes after the injection.

The vascular effect seems to depend somewhat on the pressure exerted in injecting the solution. When considerable pressure is required to introduce the epinephrin, a greater vascular reaction is usually obtained, that is, the effect more closely approaches that following an intravenous injection with its sudden marked rise in pressure of short duration. This was not a constant occurrence, however.

The epinephrin was given at all levels of blood-pressure (from 30 to 170 mm.). Attention should be directed to the marked reaction which may be obtained at very low pressures: in one experiment, on the injection of 1/15 c.c. per kilogram of epinephrin, the pressure rose from 30 to 190 mm., which was the maximum rise attained in any experiment.

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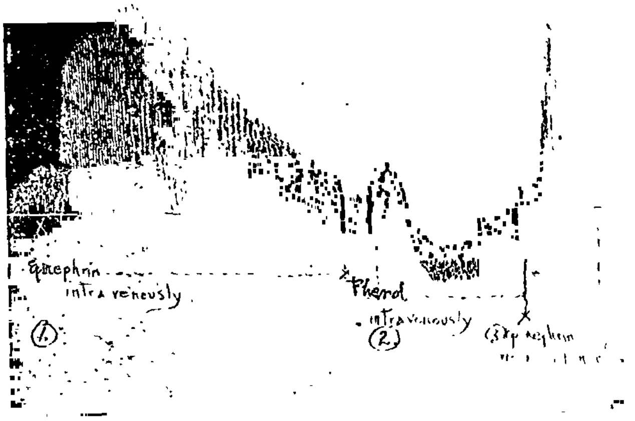
[*] From the Pharmacological Laboratory of the Western Reserve University Medical Department.

DISCUSSION

1. These experiments show that the submucosa of the nasal passages forms an excellent absorbing surface, at least for epinephrin, and probably therefore for other drugs. The effects often approach and sometimes parallel those produced by rapid intravenous injection. Evidently this phenomenon is a result of the very great vascularity of the region, the injected material at times passing directly into the venous circulation, as was shown in the following manner: Injections of carmin gelatin were made into the turbinals and septa of several dogs either shortly before or after death. Microscopic examination of sections of these parts shows portions of the injected mass in the lumen of the veins, not only at the site of injection, but also at some distance from it. The great vascularity of the region is well illustrated by the sections.



Carotid blood-pressure tracing to compare the effect of epinephrin administration by vein and into the nasal submucosa, and to illustrate the result of the rise in blood from the nasal injection on a heart weakened by phenol.

1. Epinephrin 1/20 mg. per kilogram (1/20 c.c. of a 1 : 1000 solution) by vein.
2. Phenol 50 mg. per kilogram by vein.
3. Epinephrin 1/20 mg. per kilogram into nasal submucosa.

(The submucous injection gave almost the same rise in blood-pressure as the intravenous injection; at the height of the curve the heart, weakened by the phenol, dilated and stopped, unable to resist the increased tension in the arterial system.)

2. The administration of epinephrin in this manner clinically could possibly be of serious moment. In persons in whom a sudden rise of blood-pressure is especially contra-indicated—those with cardiovascular disease, arteriosclerosis, etc.—the nasal submucous injection of epinephrin could well be of serious moment. While the danger of the administration of epinephrin to persons with arteriosclerosis should be borne in mind, it is also true that arteriosclerosis occurs later in life, when nasal operations are less frequent. Of course, the quantities used in nasal work are much smaller than those used in these experiments; in susceptible persons, however, enough epinephrin could be absorbed to effect a serious rise in blood-pressure. A case in point was met in this series: A dog had received a non-fatal dose of phenol (carbolic acid) intravenously; this was followed in a few minutes by a nasal submucous injection of epinephrin. The blood-pressure rose rapidly, and when the maximum level was reached, the heart dilated and the animal could not be recovered; the heart weakened by the phenol, could not resist the high pressure of the epinephrin (see tracing).

The effects of the cocain would doubtless also be exaggerated by the method of administration. I am not prepared to say how much of the effects observed in the clinical cases mentioned in the introduction is due to each of these drugs.

3. In conditions of circulatory collapse necessitating rapid stimulation, it would seem that the injection of epinephrin into the submucosa of the nasal septum or turbinals could well be of much value. The technic is simple, and the quantity of the drug readily controlled. This method is of course not as satisfactory as the intravenous method when the latter is feasible, which is not often the case, however, in cases of sudden failure of the heart. The method would require considerable caution in view of the fatal result mentioned above.

1353 East Ninth Street.

HEREDITARY GLAUCOMA (SIMPLEX)

THE REPORT, WITH OPERATIVE NOTES, OF THREE GENERATIONS OF ONE FAMILY [*]

F. PHINIZY CALHOUN, A.B., M.D.
ATLANTA, GA.

Heredity is recognized as a common factor in the causation of glaucoma, both of the inflammatory and non-inflammatory types. As a hereditary type glaucoma simplex is exceptionally rare beyond the second generation, and in my exhaustive search I have been able to find recorded only four other cases or families. The earliest cases are mentioned by Benedict in his publication in 1842; von Graefe in 1869 mentioned the importance of heredity in the causation of glaucoma, although no specific cases were given. Much literature is found on the direct inheritance of glaucoma of the acute or inflammatory type and special mention should be given Harlan's family, where members of five generations were afflicted. The discussion of this type of glaucoma is purposely omitted from this monograph. Lawford's very excellent review of the subject in 1907 in his report of "Examples of Hereditary Primary Glaucoma," has been kindly placed in my hands by the author and I have taken the liberty of quoting freely from the text and of copying his pedigrees.

I have had an unusual opportunity to study clinically this type of glaucoma in a family in which I found no peculiarities, common ailments (other than malaria and glaucoma) or serious illness, and in which eight members are blind or going blind from this mysterious disease. "Anticipation," so prominently mentioned by von Graefe and Lawford, is as prominently displayed in the family of which I present an account.

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[*] Read before the Section on Ophthalmology at the Sixty-Fifth Annual Session of the American Medical Association, Atlantic City, N. J., June, 1914.

[*] On account of lack of space this paper has been abbreviated for The Journal. It will appear in full in the Transactions of the Sections and in the author's reprints.

[*] Much confusion exists in the selection of titles given papers on the subject of glaucoma and no index could properly classify them. It would be most simple to adhere to the old classification, namely, primary glaucoma, including the acute and chronic inflammatory types; glaucoma simplex, the non-inflammatory type, and secondary glaucoma.

REPORT OF CASES

Case 1.—This interesting family commences with W. F. H., aged 59, seen by request March 3, 1911. He states positively that his father and mother and other near relatives whom he knew had good sight. The patient always enjoyed good health, having worked on a railroad and farm all of his life. When 29 years of age he was struck in the right eye with a twig, and soon afterward discovered that he could not see well with the left eye. He consulted a competent ophthalmologist six months later, who told him that he had glaucoma in each eye. An iridectomy was made in the left eye, and later the right eye was enucleated on account of pain. Since then he has been able to do his work in a moderate way, although his sight gradually failed until now he is almost blind. Examination: Left eye, cystoid cicatrix in region of old sclera incision. Pupil widely dilated; grey atrophic iris, media clear and marked cupping of vessels, with their caliber much reduced; nerve bluish white. Horizontal diameter of the cornea, 12 mm. Tension + 2. Light perception only.

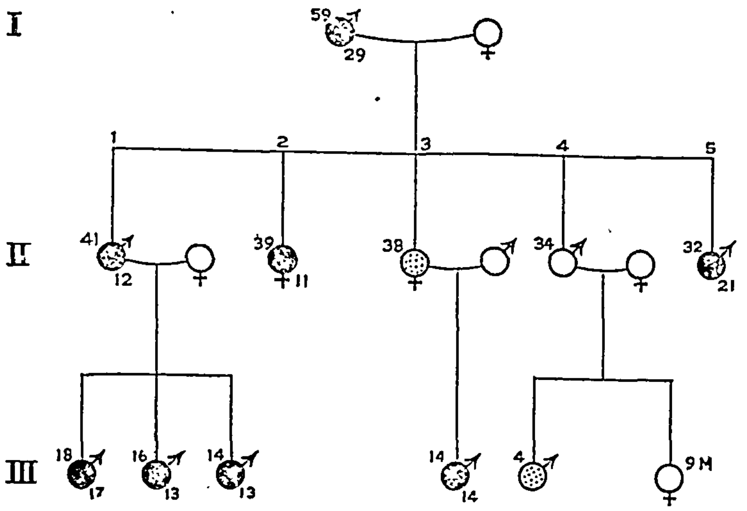

Fig. 1.—Pedigree of author's patient. Explanation of signs employed in this and the following pedigrees: ♂ male; ♀ female; the same characters in black indicate affected persons; the dotted characters persons with amblyopia and doubtful glaucoma. The numbers above each individual indicate the present age; below, the age when bad sight was first detected. Generations are indicated by Roman numerals, I, II, III, etc.

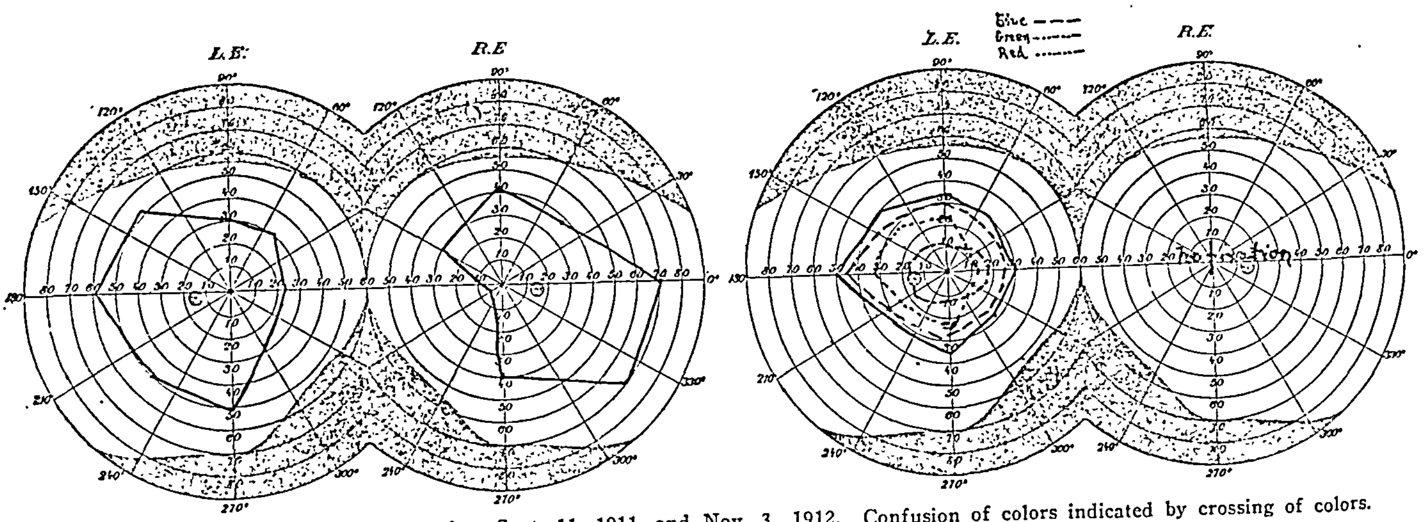

Fig. 3.—Field of vision in Case 3, taken Sept. 11, 1911, and Nov. 3, 1912. Confusion of colors indicated by crossing of colors.

Case 2.—Mrs. S. C. G., aged 41, seen by request July, 1912. Her past history has been good, pneumonia her only serious illness. She first noticed defective sight in the right eye at 12, and later her sight became so bad that she stumbled over chairs and other objects about the house. She never saw halos around lights or had pain in the eyes. At 15 an iridectomy was made on the right eye and soon afterward on the left. She states that the operations have not benefited her. Examination: right eye, vision 0; ciliary staphyloma in the region of old scleral wound; tension +3; horizontal diameter of cornea 11 mm.; iris drawn up in staphyloma; good black pupil and media clear; bluish-white nerve with marked excavation; vessels thread-like; external squint 15°. Left eye, vision 5/200 unimproved; tension +1; corneal diameter 11 mm.; anterior chamber very deep; media clear; atrophic nerve with excavation; vessels small. Color of irises brown. Three months later: Tonometer, right, 11 mm. Hg; left, 16 mm. Hg. Refraction, left, —3 S. She complains that when "bilious" she sees spangles of light; staphyloma more prominent, which accounts for low tension.

Case 3.—D. G., first son of Patient 2, aged 18, was seen Aug. 16, 1909. His health has always been good and six weeks before visit he discovered that while out hunting he could not see well with the right eye; thinks it has been growing worse since. There has been some deep pain in the eye. Examination: Right eye 20/100 unimproved; anterior chamber deep; peculiar physiologic cupping, with a serpentine twist of vessels over the nerve, which at its center dips slightly; field, slight contraction nasally; tension (digital) normal. Left eye, vision 20/20 unimproved, but reads best at normal distance with +1.25 S; eye apparently normal; field normal. Irises brown; diameter of corneas 11.5 mm. The patient passed from notice until Feb. 10, 1911. Vision, right 20/70; vision, left 20/50. Field, marked contraction nasally; tension each eye +1. (For chart of vision and tension see Fig. 2.)

February 21: LaGrange sclerectomy with broad iridectomy right eye. Patient was allowed to go home immediately. Ultimate result satisfactory. March 15: Vision, right, 20/200 — 1 ⊂ — 1 × 90 = 20/70; tertian malaria.

March 16: Iridectomy (left) section made with thin knife. Patient allowed to leave. Healing uneventful. Gave physostigmin (eserin) to use constantly.

November 17: Vision, right, 3/200; left, 18/200; tension + 1.

June 24: Vision, right, 20/200; left, 12/200; tonometer, right, 65 mm. Hg; left, 32 mm. Hg (physostigmin).

July 2: No miotic, tonometer, right, 69 mm. Hg; left, 38 mm. Hg; fundus, each eye, marked cupping with atrophic nerves. Has developed tuberculosis and has been sent to county sanatorium.

November 4: Right, 2/200 — 1.50 ⊂ — 0.50 × 60 = 20/200; left, 20/200 — 1.25 ⊂ — 1.50 × 165 = 20/70; tonometer, right, 75 mm. Hg; left, 60 mm. Hg (no miotic). Chambers very deep. Atrophic nerves, with cupping. Calls green light blue; left field much contracted, health much better.

Jan. 2, 1913: Tonometer, right, 70 mm. Hg; left, 40 mm. Hg. Operation; right eye, scleral trephine.

January 3: Chamber restored.

January 4: Eye quiet.

January 17: Tonometer, right, 15 mm. Hg; left, 33 mm. Hg.

February 7: Right 6/200, unimproved; left, 20/200 — 1.25 ⊂ + 2 × 165 = 20/70; tonometer, right, 20 mm. Hg; left, 37 mm. Hg (physostigmin).

April 17: Tonometer, right, 8 mm. Hg; left, 44 mm. (physostigmin).

April 18: Right, 5/200; left 15/200; with glass = 20/100.

June 6: Operation: Left, scleral trephine.

June 7: Chamber restored.

June 9: Comfortable.

June 23: Tonometer, right, 11 mm. Hg; left, 23 mm. Hg (physostigmin).

July 1: Tonometer, right, 7 mm. Hg; left, 25 mm. Hg.

July 22: Tonometer, right, 7 mm. Hg; left, 27 mm. Hg.

Jan. 5, 1914: Vision, right, 4/200; left, 20/100, unimproved; tonometer, right, 14 mm. Hg; left, 7 mm. Hg; good filtration scars.

Case 4.—E. G., second son of Patient 2, aged 16, was first seen Jan. 2, 1912. His health has always been good, but sight has been failing three months; no other symptom of eye trouble is present. Examination: Right eye, vision 20/50 unimproved; anterior chamber deep; fundus normal; tension + 1; field, slightly contracted for form, markedly for colors. Left eye, 20/50 unimproved; rest of examination same as right; field more contracted. Irises brown, diameter of cornea 11.5 mm.

February 16: Iridectomy (right) section made with knife; patient allowed to leave operating-room for home.

February 16: Anterior chamber unrestored.

February 17: Chamber slowly restoring.

March 7: Vision, right, 20/70 + 0.50 × 45 = 20/50; tension (digital) normal. Vision, left, 20/40 (physostigmin). (Vision and tension shown in Fig. 4).

March 8: La Grange operation (left); patient allowed to go home.

March 10: Chamber unrestored.

March 11: Chamber slowly restoring.

June 17: Right eye, 20/100. Left eye, 20/70.

July 5: Tonometer, right, 53 mm. Hg; left, 34 mm. Hg; vision, right, 20/70; left, 20/50 using physostigmin one month.

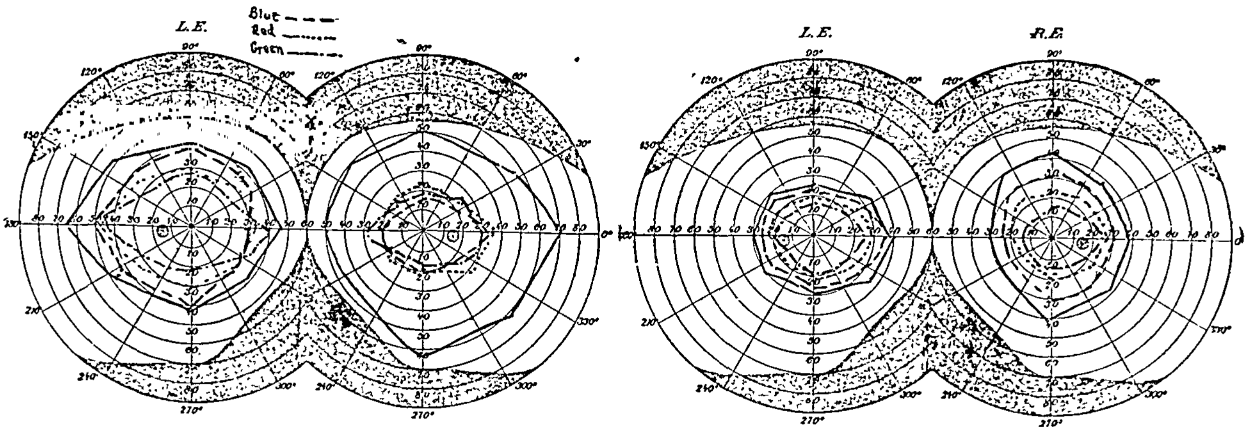

Fig. 5.—Fields of vision in Case 4, first taken Jan. 2, 1912, before miotic and later, after use of miotic.

September 2: Tonometer, right, 40 mm. Hg; left, 18 mm. Hg (physostigmin).

November 3: Right, 20/100 — 1 × 120 = 20/30; left, 20/40 + 0.50 ⊂ — 1 × 75 = 20/20; field very contracted. Tonometer, right and left, 50 mm. Hg.

December 4: Right, 20/70 + 0.50 ⊂ — 1.50 × 105 = 20/20; left, 20/50 — 1 × 75 = 20/15; tonometer, right, 60 mm. Hg; left, 38 mm. Hg.

December 5: Operation: Right, scleral trephine; large conjunctival flap containing much scar-tissue. Trephine not a perfect one, although good scleral button removed.

December 6: Chamber restored.

December 11: Chemosis.

December 18: Eye quiet.

December 28: Eye white.

Jan. 3, 1914: Right, 20/70 — 50 ⊂ + 1.50 × 30 = 20/30. Left, 20/40 + 0.75 × 165 = 20/15. Tonometer, right, 52 mm. Hg; left, 36 mm. Hg. No filtration scar in right eye. Operation advised.

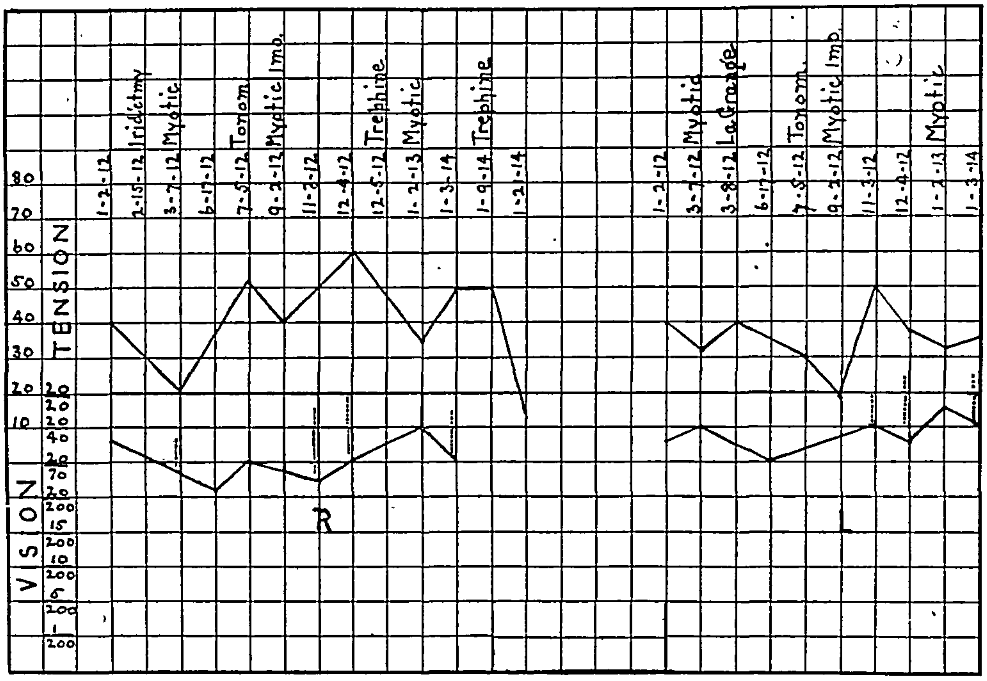

Fig. 4.—Vision and tension in Case 4. Dotted lines indicate improvement with glasses.

January 9: Operation: Scleral trephine right eye, corresponding to 1 o'clock on watch dial. Not perfectly done on account of scar tissue of former operations, although good button of sclera removed.

January 21: Tonometer, right, 13 mm. Hg; good filtration scar and eye very quiet.

Case 5.—B. G., aged 13, third son of Patient 2, seen March 1, 1911. His health is good; sight has been failing for some months. Examination: Right, 20/50 unimproved. Tension normal, rigidity of sclera; field contracted for form, great confusion of colors; fundus normal, except pale nerve; anterior chamber deep. Left, 20/70 unimproved. Tension +1; field very contracted and great confusion of colors. Diameter of cornea, right, 11.5 mm.; left, 12 mm.; irises light brown. Gave physostigmin.

September 16: Vision, right, 20/40; vision, left, 20/50; tension same. (Vision and tension shown in Fig. 7.)

September 2: Developed tuberculosis.

December 16: Right, 20/40 + 37 × 15 = 20/30; left, 20/40 + 0.50 × 105 = 20/40. Chambers appear of normal depths. Tonometer, right, 35 mm. Hg; left, 40 mm. Hg. Fundus, right, pallor to temporal half of disk, pulsation of large vein; left, decided pallor to temporal half of disk with atrophic chorioid adjoining temporal side of disk.

December 19: Operation: left, scleral trephine with iridectomy. Allowed to go home.

December 23: Unrestored chamber; pain in eye.

December 24: Chamber restored.

December 28: Eye quiet.

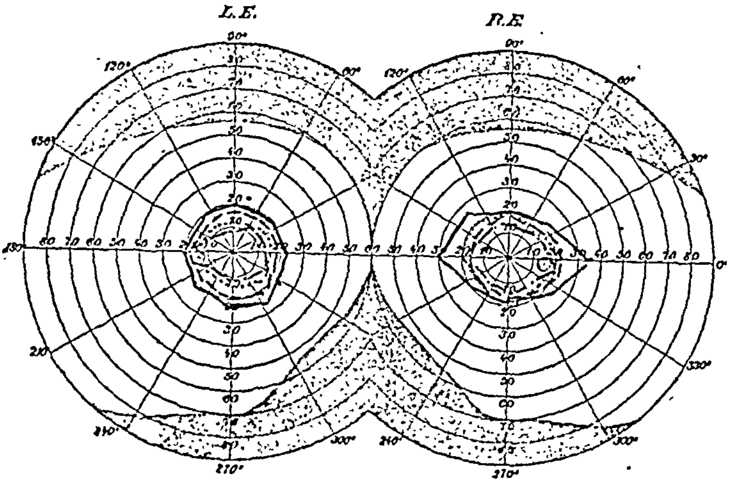

Fig. 6.—Fields of vision in Case 4 nearly 12 months later. No miotics, and great contraction for form.

January 2: Tonometer, right, 40 mm. Hg; left, 14 mm. Hg. Operation: right, scleral trephine with iridectomy. Allowed to go home.

January 7: Chamber restored slowly.

January 17: Right, 20/30 + 25 × 45 = 20/20; left, 20/40 + 50 × 15 = 20/30.

March 12: Tonometer, right, 15 mm. Hg; left, 18 mm. Hg. Scope, one vessel, cupping in right disk. Good filtration scars.

January 2: Right, 20/40 + 0.50 × 90 = 20/40; left, 20/50 — 50 × 180 = 20/50. Tonometer, right, 14 mm. Hg; left, 23 mm. Hg; flat filtration scars; fundus, no change; condition satisfactory.

Case 6.—P. H., aged 39, sister of patient in Case 2. Past history unimportant, malaria several times. Attention called to eyes at 11 years of age on account of inability to read well. Always saw "rings" around lights. Left eye inflamed at 3 years of age and has never been able to see. At the age of 12, right eye operated on and sight since has been good. Examination: Right, 20/70, unimproved. Tension: Tonometer, 17 mm. Hg; chamber deep; scope optic atrophy; little cupping; vessels of normal caliber. Good broad base iridectomy. Field very contracted. Left aphakic eye. Iridodonesis, optic atrophy, cupping of vessels. Diameter of cornea, 11 mm.; blue irises.

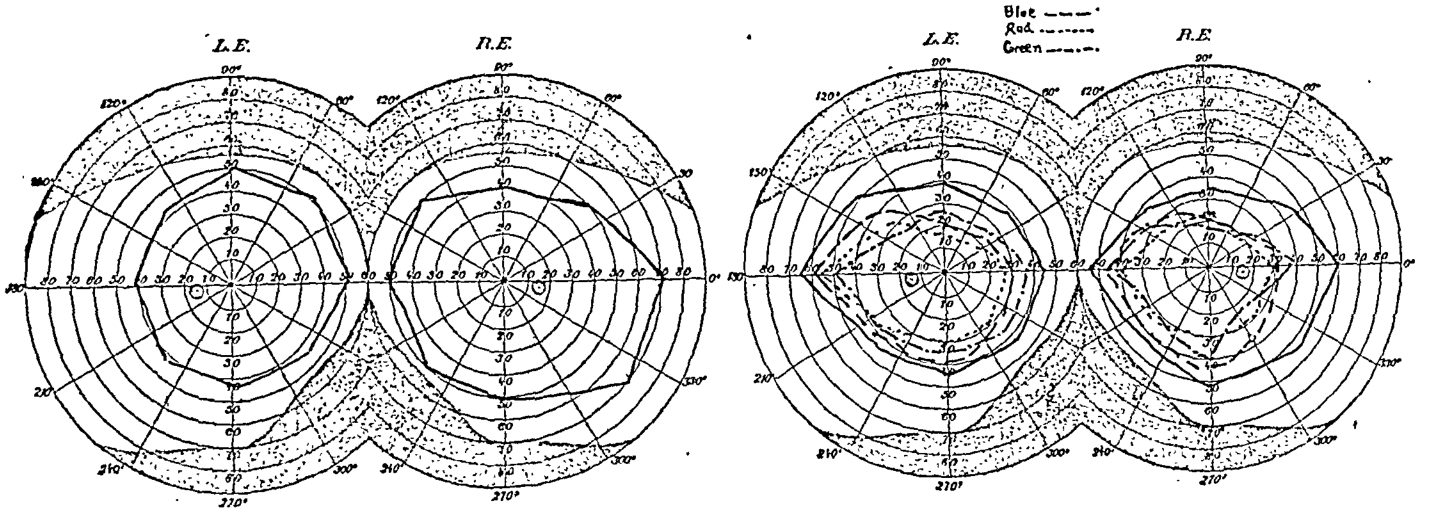

Fig. 8.—Fields of vision in Case 5, taken March, 1911, and Dec. 17, 1912. Great confusion of colors.

Case 7.—L. S., aged 14, came to the clinic to have his eyes examined, March 3, 1911, as all of his cousins and most of his family had bad sight. He was unaware that his sight was defective. He too, like other members of this series, had malaria. Examination: Right, 20/70, very deep chamber; fundus normal; hyperopia 2 D; field, some peripheral contraction. Left, 20/20, deep chamber; fundus, normal; field, some contraction; hyperopia, 1 D. Blue irises, tension normal (digital) but rigid sclera; diameter of corneas 12 mm. I did not consider that he had glaucoma, but he was directed to return for further observations.

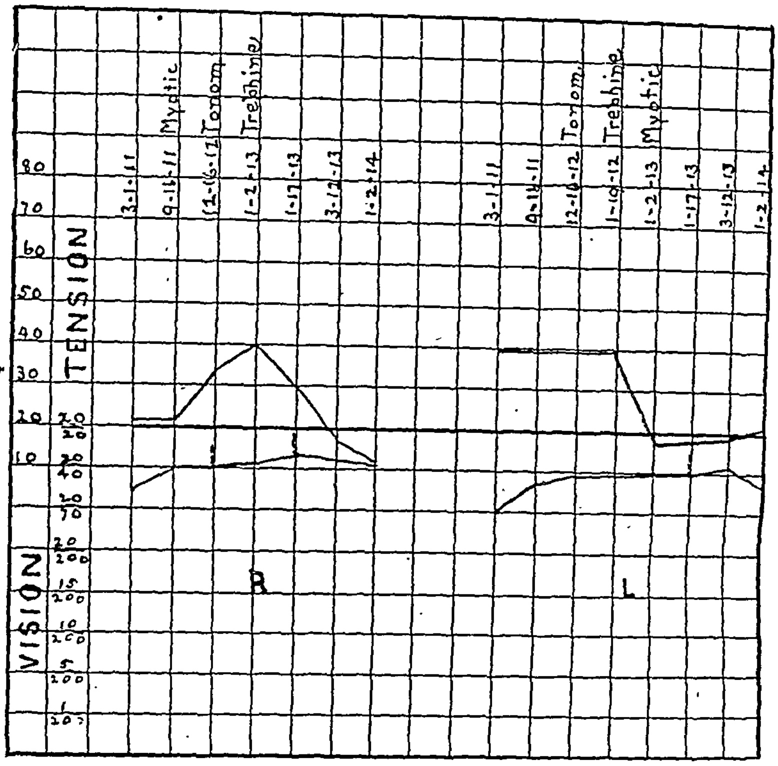

Fig. 7.—Vision and tension in Case 5. Dotted lines indicate improvement with glasses.

February 12: Right, 20/70; left, 20/40; fields, decided narrowing with great confusion of colors, so much so that accurate charts could not be made. Patient given physostigmin.

March 1, 1912: Right, 20/50; left, 20/30; Tension normal March 15, fields, decided contraction in right eye. (Fig. 9.)

March 28: Operation: Right, LaGrange sclerectomy with iridectomy. Allowed to return home.

March 29: Chamber restored, very deep.

May 20: No physostigmin, right, 20/70; left, 20/30.

November 3: Fundus, each eye, vessels normal, pale nerves, tonometer with difficulty, 27 mm. Hg; fields normal. Right, 20/70 — 1.50 S = 20/30; left, 20/20 — 0.50 × 90 = 20/20; patient lost sight of for several months.

Jan. 3, 1914: Right, 20/200 — 1.50 S = 20/30; left, 20/30 + 50 × 90 = 20/30. Tonometer: right, 15 mm. Hg; left, 25 mm. Hg. Field, left decided contraction for red and green. Fundus right, slightly pale nerve, left normal. Anterior chamber very deep and the light reflex on the cornea appears like that in keratoconus. Even now I am not positive that this patient has glaucoma, but with a variable vision, a contracted field for form and colors, and with the unquestionable family history, he should be regarded as "suspicious." I believe the sclerectomy performed has been of help.

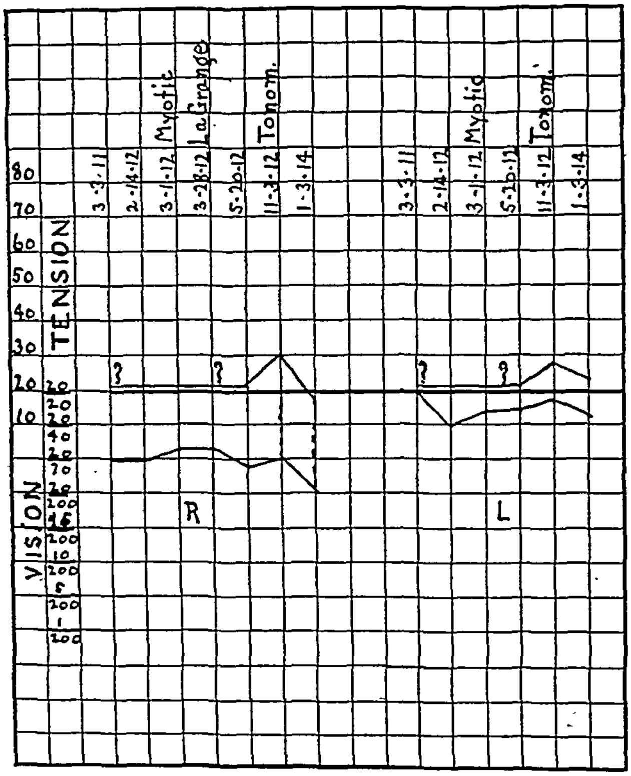

Fig. 9.—Vision and tension in Case 7. Dotted lines indicate improvement with glasses.

Case 8.—C. R. H., aged 23, brother of Patients 2 and 3. His past history is negative. Five months before the first visit, Feb. 5, 1909, he noticed that his sight was failing. Examination: Right, light perception; atrophic nerve; contracted vessels and marked cupping; chamber very deep. Tension +2. Left, 20/70, deep chamber; atrophic nerve; cupping of vessels, which were moderately contracted. Tension + 1; field, marked contraction of nasal half. Brown irises, diameter of corneas 12 mm. Hg. Gave physostigmin.

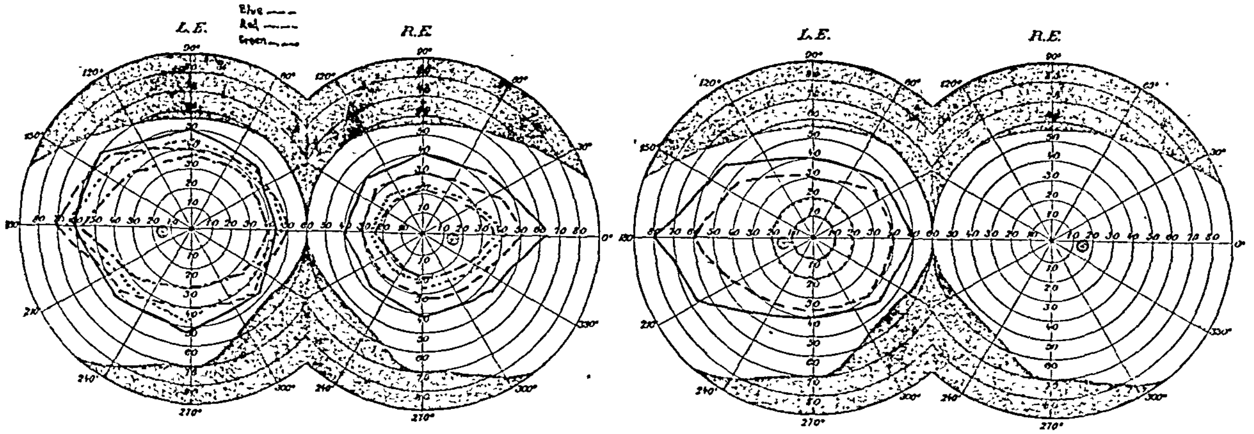

Fig. 10.—Fields of vision in Case 7, taken March 15, 1912. The contraction of the field in the right eye, and the confusion of colors in the left eye, led to operation on the right eye. The second field was taken for the left eye only, Jan. 3, 1914.

December 8 to 10: Seen for the first time in several months. Has been using drops almost continually. Right, peripheral vision only. Left, 10/200. Operation: Right eye, LaGrange sclerectomy, with iridectomy. Chamber not restored for four days. Kept in hospital bed, very quiet. Result very good at dismissal.

Feb. 2, 1911: Tension, normal right (digital). (Vision and tension shown in Fig. 11.)

February 10: Operation: Left iridectomy; allowed to leave hospital. Chamber restored in two days.

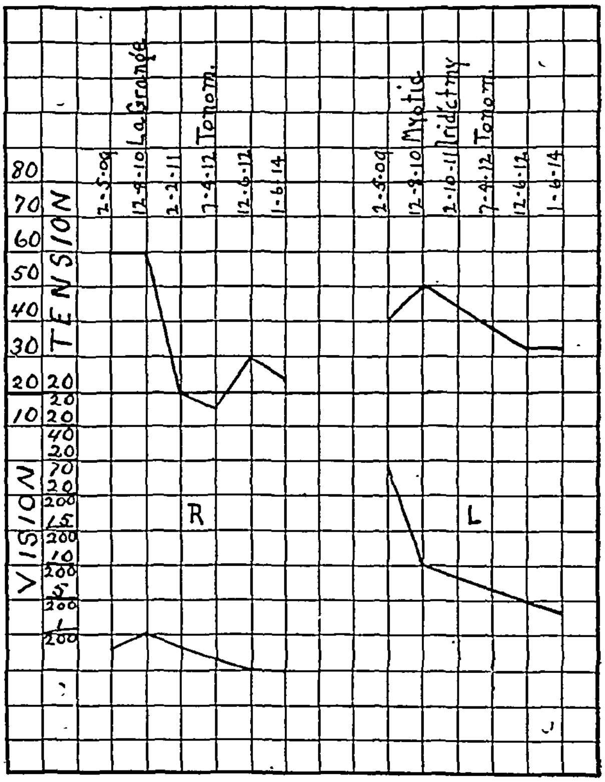

Fig. 11.—Vision and tension in Case 8.

July 4, 1912: Tonometer, right, 18 mm. Hg; left, 38 mm. Hg (no physostigmin). Fundus no change.

December 6: Right, light perception; left, 5/200. Tonometer: right, 29 mm. Hg; left, 34 mm. Hg.

Jan. 6, 1914: Right, light perception; left, 4/200. Tonometer: right, 24 mm. Hg; left, 33 mm. Hg. Fundus, optic atrophy complete, vessels thread-like.

Lawford's Case.—McL., blind for some years before death. Information from two daughters, undoubtedly chronic glaucoma. He had thirteen children, of which the first, third and seventh died in infancy; the fifth and ninth from accidents and paralysis. The sixth became attacked with bilateral glaucoma when 66 and was operated on by Lawford. She died at 71 from cerebral hemorrhage. She had seven children, all living. Author has seen all but the first. Three of them, the second, third and fifth are affected. The third and fifth have been operated on for marked chronic glaucoma, coming on at the age of 48 and 40 respectively. The second child has no objective symptoms (doubtful rainbows once), but showed slight contraction of the left field in its basal part and a large deep cup in left disk. In Generation IV there are eleven persons, children of the first and second offspring in Generation III. The eldest in the first family is 27 years of age; the eldest in the second family 29; all are reported to have good sight. "Anticipation" is well exemplified in this (For pedigree see Fig. 13).

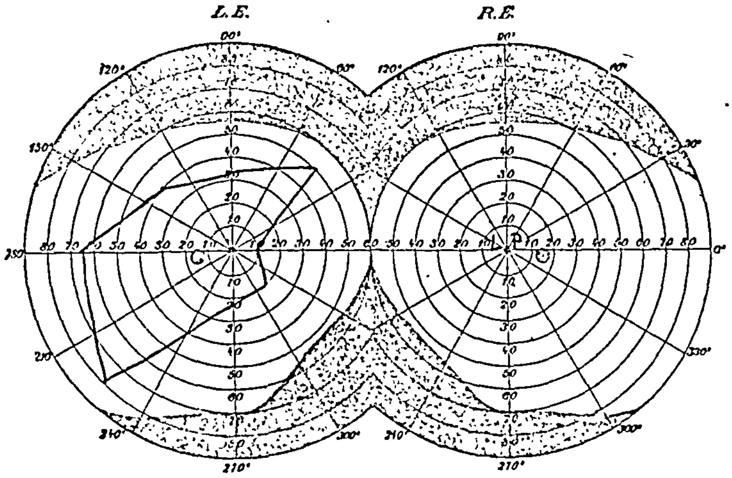

Fig. 12.—Fields of vision in Case 8, taken late in the disease.

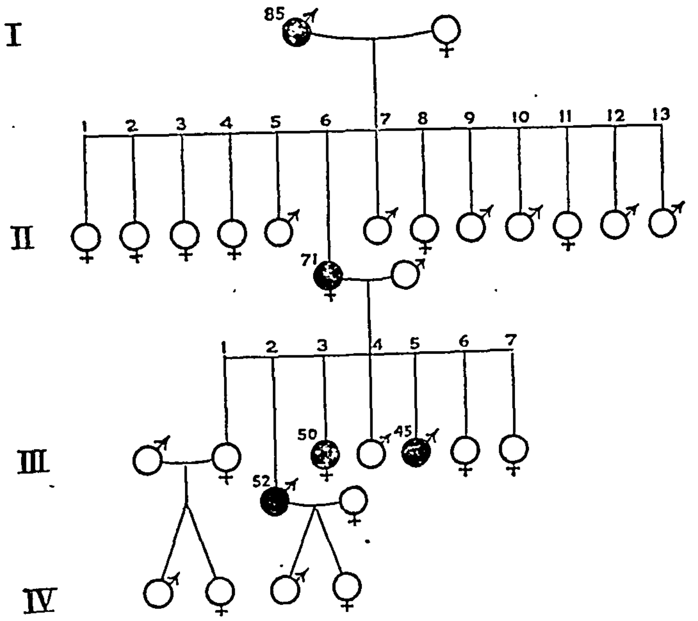

Fig. 13.—Pedigree of Lawford's patient.

Lucien Howe's Case.—"Anticipation" was well pronounced in this family. In Generation I, the fourth born developed glaucoma at 40 which led to complete blindness. The two affected children, in Generation II, the second and fourth, developed the disease at 28 and 25 respectively. In Generation III, the age of onset in the five persons attacked varied from 28 to 17 (Pedigree given in Fig. 14).

Nettleship's Case.—Three persons in three generations were affected and were all seen and operated on by the author. In Generation I, the disease began about the age of 71; in Generation II about the age of 40 and 48, and in Generation III between the ages of 25 and 30. A cousin of Generation II, the third on the maternal side is said to have been operated on for glaucoma (Pedigree given in Fig. 15).

Rudin's Case.—Generation I. Female blind from glaucoma at 30. Generation II, son of Generation I, became blind at 30. Generation III, two sons of Generation II were affected at 27 and 20 respectively.

In the review of the cases of glaucoma simplex of two and three generations, various comments by many authors were noted. Benedict in his early work cites a history of a gouty family all affected with glaucoma except one son, and he escaped because he had blue eyes. Arlt and Fischer, too, mention this phenomena, that in eyes with blue or gray irises glaucoma rarely develops.

Rogman reports a case of acute glaucoma developing from glaucoma simplex. Physiologic cupping was noted in the unaffected eye of one of the sons. The same condition with physiologic cupping was detected in a second son, who subsequently developed acute glaucoma. A third son has a similar picture of physiologic cupping in each eye with a hyperopia of 2.50 D. In none of these cases was there typical glaucomatous cupping, yet there was always a decided elevation in tension and diminished vision.

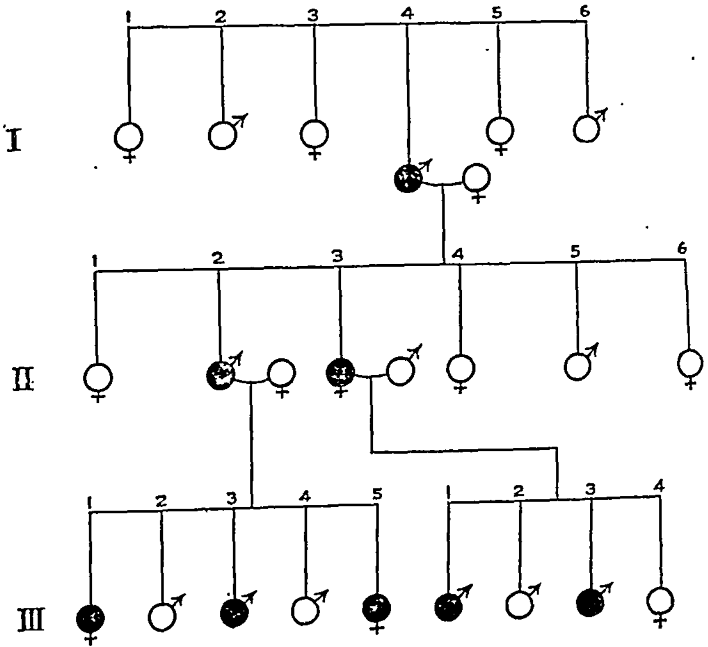

Fig. 14.—Pedigree of Howe's patient.

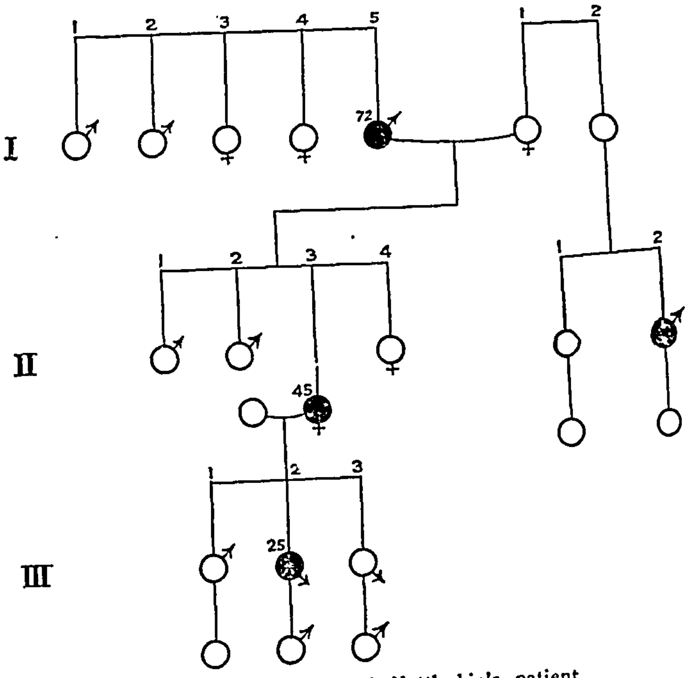

Fig. 15.—Pedigree of Nettleship's patient.

Priestley Smith has reported notes on glaucoma in two generations. A father, aged 65, hyperopia, 2.50 D.; horizontal diameter of the cornea, 10.5 mm.; a daughter, aged 29, left eye, hyperopia, 6 D. The right eye was excised for absolute glaucoma, and the measurements were: horizontal diameter of the cornea, 10 mm.; globe horizontally, 22 mm.; vertically, 21 mm.; pole to pole, 21.75 mm. The normal horizontal diameter of cornea is between 11 and 12 mm., and the same author ventures the assertion that an eye with a cornea whose horizontal diameter is 10.5 mm. rarely escapes glaucoma. Glaucoma simplex of the hereditary type developing in myopic eyes is conspicuously mentioned, especially in Somya's report of a family.

SUMMARY

In summarizing the reported cases of hereditary glaucoma (simplex) we may briefly say that:

1. "Anticipation" is the most prominent feature, as Lawford mentions. Hereditary glaucoma, usually, I might say always, develops in adults, or at an age far remote from the usual period, and whenever a case of glaucoma simplex is recognized in one under the age of 30, interest should be aroused as to the hereditary tendency.
2. The smallness of the cornea and globe does play an important part; it however, is not the sole cause, for two families of myopes have been reported. Unfortunately few corneas have been measured.
3. General diseases other than gout and rheumatism, mentioned by the older writers, have small part in the causation of this disease.
4. The liability to transmission by the two sexes is roughly equal. The male sex shows a greater liability to inheritance.

A study of the family which I have reported shows the remarkable fact that defective vision was discovered at an early age in all cases. The father, when a young man of 30, unquestionably had glaucoma, and an iridectomy was performed. The youngest age was 11 (Case 6) and the sister (Case 2) first noticed dim sight at the age of 12, whereas in the cases of her three sons, (Cases 3, 4 and 5) they were some years older. The normal refraction of the eyes was emmetropic, or slightly hypermetropic. After operations the corneal astigmatism frequently changed to minus or mixed astigmatism.

In five of the cases, thirteen operations were performed on nine eyes. The right eye in Case 4 received an iridectomy and two trephines, until lowered tension was obtained. In my hands the iridectomy as performed for glaucoma and the sclerectomy with iridectomy of LaGrange, did not give the results which were finally obtained by the scleral trephine. Time will tell, however, whether or not the subnormal tension of 7, 11 mm. Hg thus obtained acts detrimentally to the glaucomatous eye.

As for the results in the five of the eight cases which I personally cared for, we might reasonably say that after atrophic change and cupping had taken place in the nerve (Cases 3 and 8), the operations have prolonged sight and possibly arrested in a measure early blindness, whereas in the early cases without ophthalmoscopic nerve-changes, with only a reduction of vision, elevation in tension and contracted fields as symptoms of the disease, the results are gratifying. In this connection attention should be directed to the fact that after all of the thirteen operations except two (Case 8), the patients were immediately allowed to return to their homes, and no complication, unusual delay in healing or bad after-effect was the result.

Candler Building.

SCLEROCORNEAL TREPHINING FOR GLAUCOMA [*]

WALTER R. PARKER, M.D.
DETROIT

I. REPORT OF COLONEL ELLIOT'S CASES

At the request of Chairman Todd, and with the consent of Colonel Elliot, I have the privilege of presenting to the members of the Section the results of the sclerocorneal trephining operations for the relief of glaucoma performed by Col. R. H. Elliot during his visit to the United States last fall.

In preparing this report, circular letters were sent out to those for whom Colonel Elliot operated, and reports of cases were received from the surgeons named in Table 1, to whom I wish to express my sincere appreciation for their hearty cooperation.

TABLE 1.—SURGEONS REPORTING OPERATIONS BY COLONEL ELLIOT

Name	No. of Operations
Robert Beattie	1
F. E. Cheney	1
A. E. Davis	2
L. Webster Fox	10
W. H. Fox	1
P. J. Pontius	1
George S. Derby	1
J. M. Ray	2
R. A. Reeve	5
G. C. Savage	3
Frank C. Todd	18
E. Torok	1
W. H. Wendell	2
W. H. Wilmer	3
E. B. Cayce	1
L. W. Callan	2
E. T. Easton	2
John Green, Jr.	4
A. G. Morse	1
W. R. Parker	6
Samuel D. Risley	1
McCluney Radcliffe	2
William M. Sweet	1
George E. deSchweinitz	2
H. H. Tyson	1
Will Walter	1
F. E. Woodruff	1
Total	76

TABLE 2.—SUMMARY OF OPERATIONS BY COLONEL ELLIOT

Patients operated on	61
Eyes operated on	76

		Results		
	No.	Good	Poor	Failure
Males, right eye	9	7	0	2
Males, left eye	9	7	1	1
Total	18	14	1	3
Females, right eye	16	11	2	3
Females, left eye	12	11	0	1
Total	28	22	2	4
Males, both eyes	8	15	1	0
Females, both eyes	7	11	1	2
Total	15	26	2	2
Eyes trephined after iridectomy and glaucoma extraction	11	10	1	0
Eyes trephined after iridectomy for cataract	4	2	0	2
Total	15	12	1	2

Good results trephined after iridectomy ....90.9 per cent.
Good results trephined after combined extraction of cataract ....50 per cent.

The classification of results in Table 4 is based on the effect the operation produced on the tension of the eyeball, the data concerning the acuity of vision before and after operation being too meager to justify conclusions.

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[*] Read before the Section on Ophthalmology at the Sixty-Fifth Annual Session of the American Medical Association, Atlantic City, N. J., June, 1914.

[*] A report of the tabulated results of seventy-six operations performed by Col. R. H. Elliot during his visit to the United States, and a clinical study of twenty-seven operations by the author.

TABLE 3.—NUMBER OF CASES, TYPES OF GLAUCOMA AND RESULTS IN EACH GROUP OF CASES

Type of Glaucoma		Previous Iridectomy	Without Iridectomy	Complete Iridectomy	Partial Iridectomy	Iritis	Without Iritis	Results: Good	Results: Poor	Results: Failure
Absolute	1	1	..	..	..	..	..	..	..	1
Acute inflammatory	7	..	..	1	6	..	5	6	..	1
Simple	61	8	8	6	39	26	4	51	5	5
Secondary	5	4	..	..	1	1	4	4	..	1
Hemorrhagic	2	..	1	..	1	1	1	1	1	..
	76	13	9	7	47	..	..	..	..	..

GOOD RESULTS IN DIFFERENT TYPES OF GLAUCOMA

	No. of Cases	Per Cent.
Simple glaucoma	61	83.6
Acute inflammatory	7	85.7
Secondary	5	80
Hemorrhagic	2	50
All cases except simple	15	73.3

Of the twenty cases in which an iridectomy had been made, either at time of operation or previously, 10 per cent. showed signs of iritis, whereas in the fifty-six cases in which the trephining had been performed without or with a partial iridectomy, iritis was present in 51.7 per cent.

I have to acknowledge my great indebtedness to Colonel Elliot for his kindness in allowing me to present the results of his splendid work before the members of this Section.

My thanks are due to my assistant, Dr. William L. Benedict, for valuable assistance in tabulating the statistics here presented.

II. REPORT OF AUTHOR'S CASES

In the twenty-seven cases here reported, operation was performed at the Ophthalmic Clinic of the University of Michigan, except two, which were done in private practice.

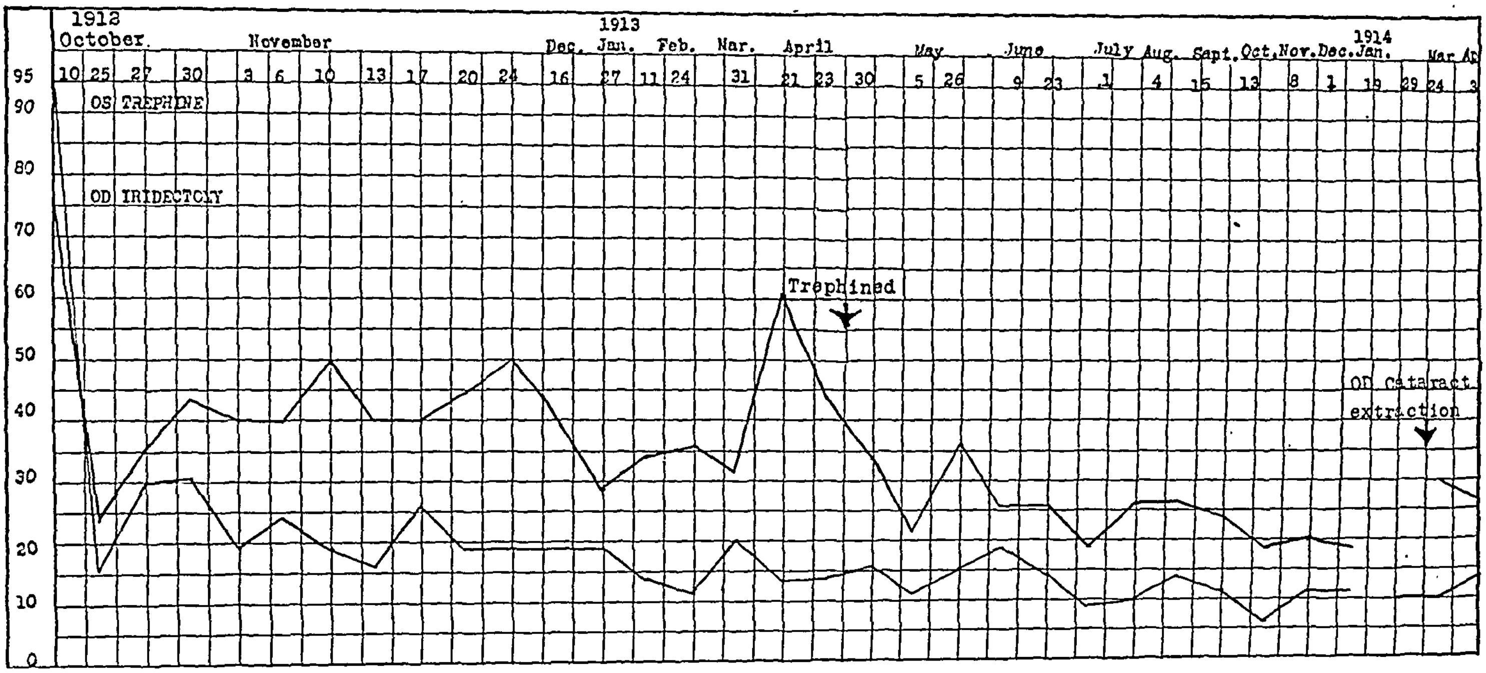

Chart 1.—Tonometric Records in Case 11.

TABLE 4.—RESULTS OF TREPHINING

	No.	Per Cent.
Operations	76	.....
Good results	62	81.58

	No.	Good	Poor	Failure	Not Stated
Eyes having had previous iridectomy	13	11	1	1	0
Eyes having complete iridectomy at time of trephining	7	7	0	0	0
Total	20	18	1	1	0
Good results in 90 per cent.					
Eyes having partial iridectomy at time of trephining	47	37	5	5	0
Eyes in which no iridectomy was done	9	7	0	2	0
Total	56	44	5	7	0
Good results in 78.4 per cent.					

TABLE 5.—CLASSIFICATION WITH REFERENCE TO THE PRESENCE OR ABSENCE OF IRITIS IN CASES IN WHICH A PREVIOUS IRIDECTOMY HAD BEEN PERFORMED OR A COMPLETE IRIDECTOMY WAS DONE AT THE TIME OF OPERATION

TREPHININGS FOLLOWED BY IRITIS

	No.	Iritis	No Iritis	Not Stated
Cases having complete iridectomy at time of trephining	7	1	5	1
Having had previous iridectomy	13	1	10	2
Total	20	2=10%	15=75%	3
Having no iridectomy	9	7	2	0
Having partial iridectomy	47	22	23	2
Total	56	29=51%	25=44.6%	2

TABLE 6.—SUMMARY OF AUTHOR'S CASES

Males	13	Eyes operated on	17
Females	7	Eyes operated on	10
	20		27

Cases in which both eyes were trephined	5
Cases in which the same eye was trephined twice	2

TABLE 8.—NUMBER AND TYPES OF CASES, TOGETHER WITH THE RESULTS OBTAINED IN EACH TYPE OF GLAUCOMA

Classification	No. of Cases	Good No. %	Poor Results No.	Failure No.
Acute	1	..	..	1
Simple	14	11=78.5	2	1
Chronic inflammatory	6	4=66.6	2	..
Secondary to cataract extract.	2	..	1	1
Secondary to luxated lens	1	..	..	1
Secondary to traumatism	1	1	..	..
Buphthalmos	2	..	..	2
	27	16	5	6

TABLE 9.—RESULTS OBTAINED IN CASES OF SIMPLE GLAUCOMA, COMPARED WITH THOSE IN ALL OTHER TYPES OF THE DISEASE AS CLASSIFIED

Type	No.	Results: Good No. %	Results: Poor No. %	Results: Failure No. %
Simple	14	11=78.5	2=14.2	1=7.1
Other types	13	5=38.4	3=23.0	5=38.4
	27	16	5	6

Good results from simple cases..........78.5 per cent.
Good results from all other cases..........38.5 per cent.

I shall not discuss the technic of the sclerocorneal trephining operation, but rather confine my report to the clinical facts as presented by the case histories, and base my conclusions on these findings alone.

TABLE 10.—CLASSIFICATION WITH REFERENCE TO THE PRESENCE OR ABSENCE OF IRITIS IN CASES IN WHICH A PREVIOUS IRIDECTOMY HAD BEEN PERFORMED OR A COMPLETE IRIDECTOMY WAS DONE AT THE TIME OF OPERATION

Character of Iridectomy	No.	Iritis No. Per Ct.	No Iritis No. Per Ct.
Complete iridectomy at time of trephine operation	8	1 = 12.5	7 = 87.5
Previous iridectomy	7	2 = 28.5	5 = 71.4
Partial iridectomy	8	6 = 75.0	2 = 25
Without iridectomy	4	4 = 100	
	27	13	14

TABLE 11.—FREQUENCY OF OCCURRENCE OF IRITIS IN THE DIFFERENT FORMS OF IRIDECTOMY

	No.	Iritis No. Per Ct.	No Iritis No. Per Ct.
Total number of cases of complete and previous iridectomy	15	3 = 20	12 = 80
Total number of cases of partial or without iridectomy	12	10 = 83	2 = 16.6
	27	13	14

TABLE 7.—VISION AND TENSION BEFORE AND AFTER OPERATION, AND RESULT AS DETERMINED BY TENSION AT TIME OF LAST OBSERVATION

Case No.	Date	Type	Vision Before—After Operation *		Tension			Result	Remarks
			Before	After	Before mm.	Date	After mm.		
1	12/ 9/12	Traumatic secondary.	Nil	Nil	95	4/ 9/13	21	Good	
2	12/16/12	Simple	6/15	6/15	44	2/ 2/13	21	Good	
3	5/ 3/13	Buphthalmos	?	?	48	7/14/13	70	Failure	
4	5/ 3/13	Buphthalmos	?	?	48	7/14/13	60	Failure	
5	5/26/13	Simple	Nil	Nil	70	6/ 4/13	16	Good	
6	5/26/13	Secondary cataract	5/30	1/60	83	7/12/13	47	Poor	Immediate result good 17 days after operation. Tension 16 mm. Discharged cured. One month later, tension 47.
7	7/ 7/13	Simple	1/60	l. p.	47	7/ 8/13	20	Good	
8	10/31/12	Chronic inflammation.	Nil	Nil	60	3/13/13	13	Good	
9	10/3 /12	Chronic inflammation.	Nil	Nil	71	3/13/13	18	Good	
10	10/10/12	Simple	l. p.	l. p.	39	1/27/14	16	Good	
11	10/17/12	Simple	l. p.	l. p.	105	3/24/14	10	Good	
12	4/24/13	Simple	5/60	1/60	45	3/24/14	27	Good	
13	10/17/12	Simple	Obj.	Obj.	60	10/ 3/12	12	Good	
14	10/31/12	Secondary	l. p.	Nil	36	2/ 7/13	100	Failure	Immediate results good. Tension at end of two weeks 14 mm.
15	11/21/12	Chronic inflammation.	Nil	Nil	83	12/22/12	82	Failure	Hemorrhagic, Glau. O. S.
16	2/24/13	Chronic inflammation.	Nil	Nil	60	5/ 5/13	60	Failure	
17	6/30/13	Chronic inflammation.	Nil	Nil	60	3/ 5/14	20	Good	
18	4/24/13	Sec. luxated lens	Nil	Nil	91	1/ 7/14	55	Failure	
19	7/ 7/13	Simple	5/60	5/60	51	11/ 6/13	15	Good	
20	7/21/13	Simple	5/60	6/60	51	11/ 6/13	7	Good	
21	11/20/13	Chronic inflammation.	Fingers	6/30	50	1/19/14	18	Good	
22	10/20/13	Simple	Nil	Nil	60	10/31/13	70	Poor	
23	10/10/13	Simple	Nil	Nil	44	10/31/13	60	Poor	
24	1/ 8/14	Acute inflammation	l. p.	Nil	62	2/ 2/14	50	Poor	Immediate results good. Tension 24, ten days after operation.
25	1/12/14	Simple	Nil	Nil	73	3/19/14	36	Good	Subsequent to last tension record eye soft, but tonometer record not recorded.
26	1/14/14	Simple	6/20	6/20	36	2/ 4/14	26	Good	
27	11/20/13	Simple	6/9	Obj.	43	4/ 6/14	15	Poor	Immediate result perfect, chamber closed on 19th day. Quiet iritis, with exudate in pupillary space.

* In this column l. p. stands for light perception.

Of the fifteen cases in which the iridectomy was complete, three showed signs of iritis and twelve showed no signs of inflammation of the iris. On the other hand, of the twelve cases in which a partial or no iridectomy was performed, ten had iritis, while but two escaped. These results favor a complete iridectomy in the proportion of 20 to 83.3.

The results obtained by Colonel Elliot as tabulated in Table 5 justify the same conclusion.

Of the twenty cases in which an iridectomy had been made, either at the time of operation or previously, 10 per cent. showed signs of iritis; whereas in the fifty-six cases in which the trephining had been performed without or with partial iridectomy, iritis was present in 51.7 per cent. These results favor a complete iridectomy in the proportion of 10 to 51.7.

Of the six failures two (Cases 3 and 4) were cases of buphthalmos in the same patient. In each eye there was loss of vitreous at the time of operation, and it is possible that the opening was made too far back. Photophobia and keratitis, which were present at the time of operation, were very much improved, but ten weeks later there was in each eye a small white spot at the site of the trephine opening, and the tension had increased from 48 to 70 mm. in the right eye, and from 48 to 68 mm. in the left eye. The tension both before and after operation was taken under ether anesthesia. One case of glaucoma, secondary to cataract operation followed by uveitis (Case 14), was a very unfavorable case for any operative procedure. The tension at the time of the operation was 36 mm. Twelve days after operation it was 14 mm., but soon increased, until in two months' time it had reached 100 mm. At this time the eye was enucleated for relief of pain, the patient refusing to submit to any other operative procedure. The fourth case (Case 15) was probably one of hemorrhagic glaucoma. No ophthalmoscopic examination could be made, but the fellow eye showed a marked hemorrhagic retinitis. The last case (Case 16) was one of chronic inflammatory glaucoma, vision nil, deep scleral injection, very shallow anterior chamber, iris inflamed, tension 60 mm. A 1.5-mm. trephine opening was made associated with a small iridectomy, with no relief of tension. Later a 2-mm. opening was made with small iridectomy. The tension was temporarily reduced, but the eye was too tender to permit of tonometric observations. Two months after the second operation the tension was 60 mm., and there was a large prolapse of iris or ciliary body at the site of each trephine opening, one about 2 mm. and the other fully 3 mm. in diameter.

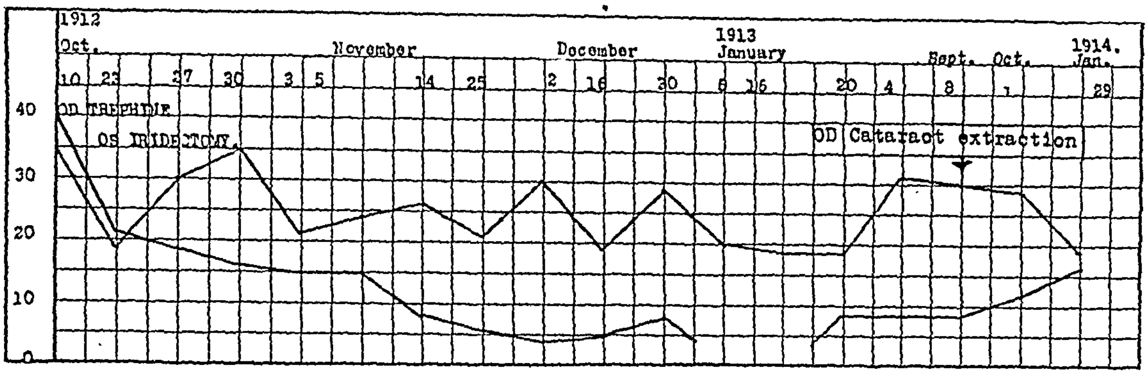

Chart 2.—Tonometric Records in Case 10.

A comparison of the results obtained from an iridectomy and a sclerocorneal trephining operation is well shown in Case 11 (Chart 1), an advanced case of simple glaucoma in both eyes. Vision was reduced to light perception, tension right eye 75 mm., left eye 105 mm: Oct. 10, 1912, I performed a deep iridectomy on the right eye and trephined the left, using a 1.5-mm. trephine, and included the pupillary border of the iris in the iridectomy. Fifteen days later the tension in the right eye was 22 mm., in the left eye 18 mm. Five days later the tension in the right eye, which had been trephined, was 30 mm., but later it dropped to between 11 and 20 mm., where it has since remained. The eye on which an iridectomy was done gradually increased in hardness until on April 21, 1913, five months after operation, the tension was 60 mm. A sclerocorneal trephining operation was performed at this time and the tension reduced to 20 mm., where it remained for nine months, when, following a cataract extraction, it increased to 30 mm., but soon dropped to normal where it has remained until the present time.

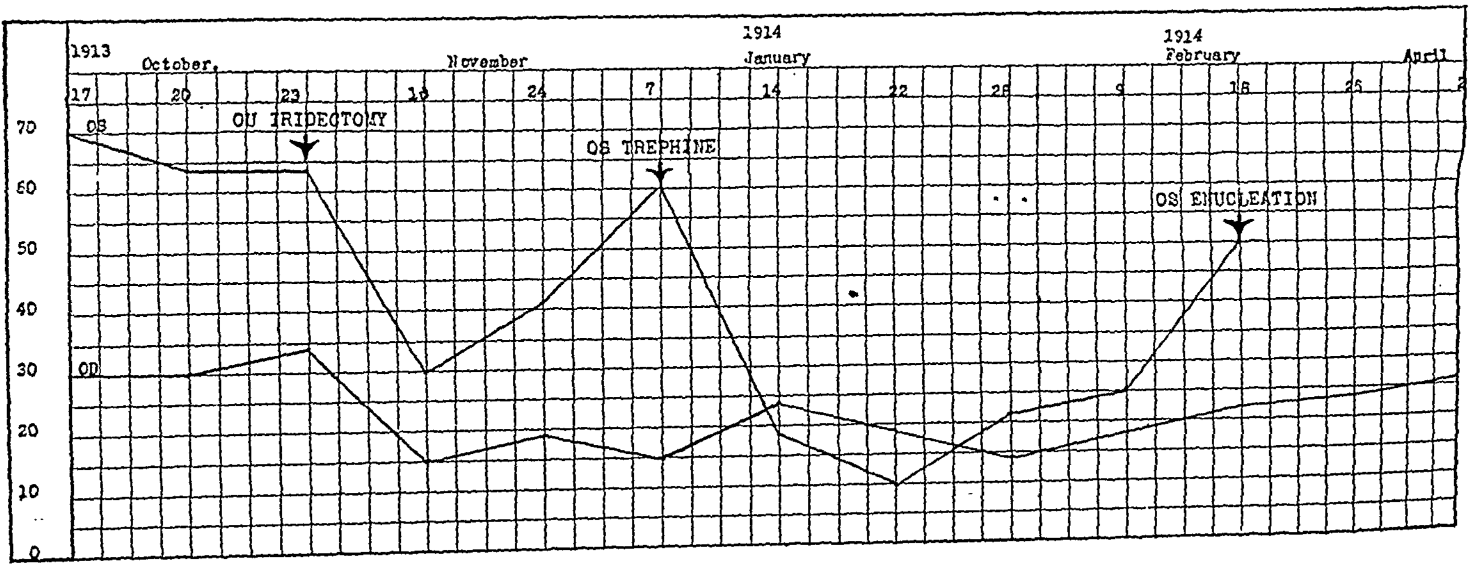

Chart 3.—Tonometric Records in Case 24.

The results in a second case on which a comparative test was made and kept under observation for a period of two and one-half years is shown in Chart 2 (Case 10). The right eye, with a tension of 30 mm., was trephined on Oct. 10, 1912, and at the same time the left eye, with a tension of 35 mm., was subjected to a broad, deep iridectomy. Vision in each eye at the time of operation was light perception. The tension of the eye which was trephined was reduced to between 4 and 10 mm., while that on which an iridectomy was done was reduced to between 20 and 30 mm. While the result in this case is recorded as good, it would be important to know what effect prolonged low tension would have on vision.

In Chart 3 is shown the tonometric result in a case of simple glaucoma in both eyes with an acute exacerbation in the left. An iridectomy in the left eye followed by a trephining operation failed to keep the tension down, and the eye was enucleated for the purpose of relieving pain. The tension in the right eye has remained normal since the time the iridectomy was performed.

CONCLUSIONS

The average results obtained from the sclerocorneal trephining operation for relieving glaucoma are better in the non-inflammatory type than in the other forms of the disease.

The results obtained when the operation was associated with a complete coloboma were better, as regards both the frequency of the occurrence of iritis and the effects on the tension, than when performed with a partial iridectomy or when the iris was left intact.

The remote results may not be so good as those shown immediately after the operation.

The number of cases here recorded is not sufficiently large to permit of definite conclusions concerning the real value of the sclerocorneal trephining operation in relieving glaucoma.

I am greatly indebted to Dr. D. V. Smith of the Ophthalmic Department of the University of Michigan for valuable aid in preparing the statistics presented in this paper.

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THE VALUE OF MIOTICS IN CHRONIC GLAUCOMA *

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PHILADELPHIA

I have already treated of this subject before the Section on two previous occasions, at the Boston session in 1906 and the Chicago session in 1908, and this third paper is largely supplementary to these earlier communications.

At the 1908 meeting, sixty-five cases of simple chronic glaucoma were analyzed which had been treated by miotics, of which all but seven had been observed over a period of two years, and twelve for more than ten years, and the results attained by the constant and prolonged use of these drugs were compared with a similar series of cases treated by iridectomy. Among the percentages deduced from this analytic study it was found that central vision was maintained in the miotic series, each case of which was observed over an average period of five years and eight months, in 80 per cent. of the cases, in comparison with 25 per cent. in the most favorable group of iridectomized eyes. Other figures bearing on other phases of the glaucoma problem were equally conclusive as to the superiority of the drug treatment and demonstrated conclusively that miotics exert a much more beneficial influence on the progress of simple chronic glaucoma than the removal of a portion of the iris. Whether or not better results will be found to follow the newer operations for glaucoma, time and the careful analysis of a large series of cases treated by these more recent methods can alone determine; and though it would appear that the establishment of a permanent filtration scar by the trephine gives greater hope of retaining vision in a higher percentage of cases than other operative means, it must be remembered that the claims for this procedure have not yet been proved, and some years must still elapse before a true estimate may be had of the value of this now popular measure.

Of the sixty-five cases analyzed by me in my 1908 series, twenty-two were taken from my own records, the remainder contributed by generous colleagues. During the six years which have elapsed since the publication of that report, nine of my twenty-two patients have either died or passed from under my observation; thirteen, however, still remain under my care, and their further progress, with the histories and analyses of eighteen additional cases, also from my private practice and all observed over a prolonged series of years, will form the basis of the present communication.

Of the 13 cases remaining from the 1908 series, 1 was observed for a period of 21 years, 3 for 18 years, 1 for 16 years, 2 for 14 years, 2 for 12 years, 1 for 10 years, 1 for 8 years, 1 for 7 years and 1 for 6½ years. In this series but 22 eyes lend themselves to analysis, as 3 were blind when they came under observation and one had been iridectomized.

Of the 22, 17 eyes were either normal or showed but the earliest traces of glaucoma at the first examination, in 3 the disease was moderately advanced, while in 2 the glaucomatous process had progressed to such an extent that but little vision remained. Fourteen eyes of this first group retained practically normal vision and field as long as they were under observation, a general average of ten years, as follows:

One eye presented practically normal vision and field after 21 years, 5 eyes after 18 years, 1 after 16 years, 1 after 14 years, 2 after 12 years, 1 after 10 years, 2 after 8 years and 1 after 7 years.

Three went blind while under treatment, in 5, 6 and 10 years, respectively. Of the 3 eyes in which the disease was but moderately advanced, 1 went blind in 2 years; the others have maintained vision 8 and 10 years, respectively. The results attained in the 2 eyes in which the disease was farthest advanced were strikingly good, vision and field being maintained without further loss in 1 case for 10 years, while in the second but a slight loss was recorded during the same period.

Of the 18 cases now reported for the first time, 1 was observed for a period of 18 years, 2 of 10 years, 1 of 8 years, 1 of 7 years, 7 of 6 years, 1 of 5 years, 2 of 3 years, 2 of 2 years and 1 of 1 year.

These 18 cases presented but 24 eyes for analysis, some of the patients having already lost one from glaucoma before consultation, while in others but 1 eye was affected. Of these 24 eyes, 13 showed but the rudiments of the disease at the first examination, the glaucomatous process was moderately advanced in 8, while in 3 central vision and the visual field were greatly compromised. In the first group practically normal vision has been maintained while the cases have been under observation, for periods ranging from 5 to 18 years, an average of 7½ years. In the second group of 8 eyes, vision has been maintained for periods ranging from 2 to 10 years, an average of about 4 years, while in the 3 eyes which were in the most advanced stage of the disease, vision has been maintained for periods ranging from 1 to 6 years, an average of 3 years. It should be noted that in 2 out of these 3 eyes the disease was of a pronounced hemorrhagic type and that notwithstanding this, vision is still maintained in 1 after a period of 6 years and that blindness ensued in the other after the maintenance of 6 years of fair vision.

The figures obtained by the analysis of these 31 cases agree in large measure with those published in connection with the 1908 series. As it was pointed out at that time, just as the advocates of operative measures find beginning cases to be more amenable to treatment than those in the more advanced stages of the disease, so cases treated by miotics from the early stages give better percentages so far as the maintenance of central and peripheral vision is concerned. Twenty-seven of the 46 eyes analyzed in the two groups of cases belonged to this class, and with the exception of 3, all preserved nearly normal vision and fields as long as they remained under observation, and this is the more extraordinary when it is considered that 1 of these cases has been observed for 21 years, 4 for 18 years and 8 for a period of 10 years or more. As I remarked in a previous paper, in view of such favorable statistics from the use of miotics, when the risks and complications attending all operations on the eye are considered, as well as the possibility of error in the diagnosis and operation being performed on eyes with merely atrophic nerves, is

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* Read before the Section on Ophthalmology at the Sixty-Fifth Annual Session of the American Medical Association, Atlantic City, N. J., June, 1914.

* On account of lack of space this paper has been abbreviated for THE JOURNAL by omission of some of the case reports. It will appear in full in the Transactions of the Sections and in the author's reprints.

operation ever justified when both central and peripheral vision are normal, without trial of what miotics can do?

In 11 eyes in which the disease was noted as being moderately advanced, in the first group, 2 maintained vision for 8 and 10 years, respectively, and 1 went blind in 2 years, in the second group vision has been maintained for periods ranging from 2 to 10 years, an average of about 4 years. The best results of all, relatively speaking, were attained in the far-advanced or desperate cases, for of the 5 cases so designated, vision and field were maintained without further loss in 1 case for 10 years, and in a second with but slight loss during the same period. In the remaining 3 eyes, vision has been maintained for periods ranging from 1 to 6 years, and this in spite of the fact that in 2 of the latter the disease had assumed a hemorrhagic type. I would recall, in this connection, the remarkable results attained in Case 48 of the 1908 series, in which full central vision was maintained in a typically glaucomatous eye with field cut almost to fixation for 14 years.

It is in this class of cases that iridectomy has been attended with such bad results, and while cyclodialysis and the trephining operations may be less injurious, I shall continue to employ miotics continuously and energetically until convinced by the report of a series of suitable cases that operative measures have proved their superiority. My observations have convinced me that miotics cannot be regarded in any sense as curative, for notwithstanding their continuous use, the glaucomatous process still goes on, very slowly, it is true, but the eye grows steadily harder, the excavation becomes broader and deeper and the anterior chamber shallower. Again, I desire to emphasize what I have already said elsewhere, namely, that miotics should be relied on as the sole means of treatment only in those cases which are free from attacks of so-called glaucomatous congestion, the presence of such congestive symptoms being in my opinion the chief indication for some form of operative treatment, be it iridectomy, cyclodialysis or trephining; and second, that to gain the full benefit of miotics it is necessary that they should be administered properly. Beginning in doses small enough to avoid creating spasm of the ciliary muscle, and rapidly increasing the dose until the pupil of the affected eye is strongly contracted, this degree of contraction should be maintained as long as life lasts by gradually increasing the strength of the solution, from time to time, and by instillations of the drug at intervals of every three or four hours.

The miotics which are best adapted to control intra-ocular tension are physostigmin (eserin) salicylate and pilocarpin nitrate. This salt of physostigmin is more persistent in its effects and less changeable in solution than other salts of the drug and is less irritating to the conjunctiva. I prescribe a solution of pilocarpin to be used about every four hours, morning, noon and evening, and one of physostigmin of twice the strength at bedtime, thereby avoiding in a measure the blurring of vision which is occasioned by the action of the physostigmin on the ciliary muscle during the day, while the eye receives the greatest effect of the drug during the eight hours or more which elapse between the instillations of the drops during the night. In incipient cases of the disease an excellent initial dose is that of ⅙ grain of pilocarpin to the ounce of water. The strength should be gradually increased, so that at the end of a year 1 grain to the ounce is employed, at the end of the second year 2 grains, and at the end of the third year 3 grains to the ounce solution. This strength will suffice to maintain the pupils at the desired point of almost pin-point contraction. Physostigmin should be employed in half the strength of pilocarpin and should be increased in solutions of equal proportions.

Conjunctival irritation can usually be avoided by employing only fresh and sterile solutions of the miotics and by frequent cleansing of the conjunctiva by boracic acid solution. Should such irritation arise, local applications of argyrol and flushing of the conjunctiva with mild lotions, conjoined with the use of ice compresses and a weakened dose of the miotic will usually occasion its prompt disappearance.

Gentle massage of the eyeball is of decided advantage and should be practiced several times each day, for five minutes at a time. In addition to these local measures, the patient should be instructed as to the number of hours daily the eyes should be used in near vision. All near work should, of course, be restricted, and should be carried on only under the most favorable conditions regarding illumination, posture of the patient, etc.

Proper lenses should be adjusted to the eyes for both near and far use, and the refraction should be frequently estimated and any error corrected, changes in the refraction being rendered frequent by the action of the miotic on the ciliary muscle.

A large number of hours daily should be spent in the open air, and, as the disease is frequently the ocular expression of chronic rheumatism and gout, the patient should be urged to spend the greater part of the year under the most favorable climatic conditions to combat that diathesis. The skin should be kept active, the gastro-intestinal apparatus regulated, and any local source of inflammation or irritation, neighboring on the eyes, such as inflammation in the nasal passages or their accessory sinuses, should be allayed. Particular care should be given to the peripheral circulation, nitroglycerin and strophanthus being often of value. Strychnin should be administered, not only on account of its action on the circulation, but also because of its influence on the optic nerve. On account of their antirheumatic properties, the salicylates are of decided value and should be administered frequently for continued periods.

The notes of the thirty-two cases follow. These are necessarily much abbreviated and give but the briefest description of the progress of each case. The fields are reproduced in outline merely, and though in many instances a careful test of the visual field was made every three or four months, on account of the necessity for brevity, but one set of fields is published for each year or series of years. The outlines were obtained by testing with 10 mm. white and red objects, the outer representing the white field, the inner the red. All reference to the dosage of the miotics has also been omitted, the treatment prescribed in each instance having been along the lines specified in the preceding paragraphs.

REPORT OF CASES

Case 1 (Case 1 of 1908 series).—Woman, aged[1] 81, under observation nearly twenty-one years, first sought treatment on account of secondary glaucoma in the right eye, following iritis. Iridectomy was performed, but without avail, vision soon being reduced to 2/40 eccentrically, and the field being much contracted.

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[1] The age given in all of the cases refers to what it was at the time of last observation.

Examination.—O. S., signs of chronic glaucoma, anterior chamber shallow, sclera rigid, commencing pathologic excavation.

O. S. V. + S. 0.50 D. ⊃ + C. 0.25 D. ax. 20° = 5/5.

Field normal. This patient has been seen at intervals of at least every six months during twenty-one years, the miotics being gradually increased in strength until pilocarpin, 4 grains to 1 fluidounce, 2 drops three times a day, is now employed to keep the pupil contracted ad maximum.

During the past six years the disease has progressed but little. Vision equals 5/6, field but moderately cut. Reduction in vision and field doubtless are due to lenticular haze. This patient has been most assiduous in carrying out the treatment, and the splendid results must be attributed to that. At no time in the twenty-one years has there been any conjunctival irritation from the drugs.

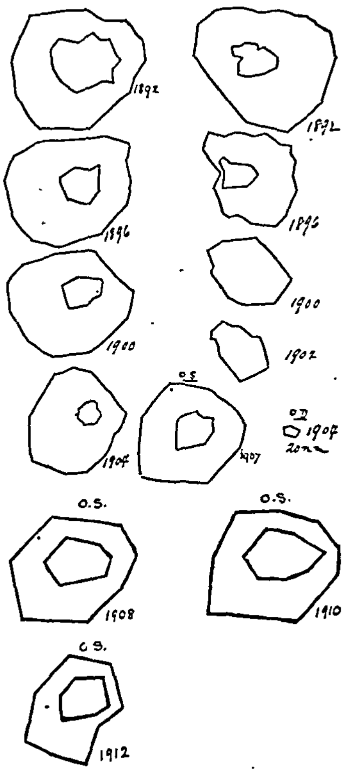


Fig. 1.—Fields of Case 1.

Remarks. — Glaucomatous process held in check while under observation for almost twenty-one years, central vision being still normal and the field but slightly contracted.

Case 2 (Case 5 of 1908 series).—Woman, aged 64, under observation eighteen years. Full vision still maintained. Field but slightly contracted. Some tendency to conjunctival irritation, readily combated with astringents. At first examination in 1896:

O. D. + S. 1.75 D. ⊃ + C. 0.75 D. ax. 100° = 5/5.
O. S. + S. 1.25 D. ⊃ + C. 0.50 D. ax. 60° = 5/5.

Both optic nerves hyperemic, with central excavations. Patient seen at intervals of one or two years for change of glasses and minor symptoms. Eight years after first observation, both optic nerves were noted as being pale and "luminous" and the excavations were deep and undermined above, this being the more pronounced in the right eye. The anterior chambers were shallow and the sclera rigid. Vision and fields normal. The strength of the miotics has been gradually increased, the pupils being maintained at pin-point contraction, but the excavations have gradually extended until they are now pronouncedly glaucomatous. Vision and fields practically normal in each eye.

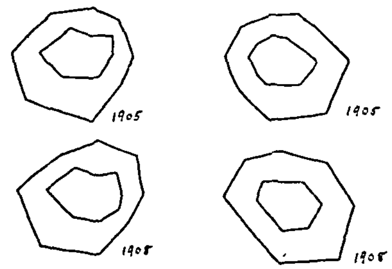


Fig. 2.—Fields of Case 2.

Remarks.—Development of glaucoma cups while under observation. Stage of hyperemia of the nerve preceding the atrophic process. Maintenance of full visual acuity and extent of visual fields with miotics.

Case 3 (Case 20 of 1908 series).—Woman, aged 86, under observation eighteen years. At time of first observation complained of occipitofrontal pains radiating into the eyes, worse on the left side. Six months previously she had had several attacks of sudden failure of vision in the left eye, which had lasted for a few minutes. During these periods of visual obscuration, the defect began in the temporal field. Both nerves were hyperemic, central excavation in the right eye becoming undermined down and out. Excavation in the left eye shallow but typically glaucomatous. Anterior chambers shallow. Sclerae rigid, especially in O.S.

At the end of two years, vision had deteriorated in O.S. to 3/60, and at the end of another year to 1/60, at which it still remains.

1901: O. D. V. + C. 0.25 D. ax. 70° = 5/5.
1902: O. D. V. — S. 0.25 D. ⊃ — C. 0.50 D. ax. 120° = 5/5.
1903: O. D. V. — S. 0.50 D. ⊃ — C. 0.75 D. ax. 145° = 5/5.
1905: O. D. V. — S. 1. D. ⊃ — C. 1.25 D. ax. 145° = 5/5.
1906: O. D. V. — S. 2. D. ⊃ — C. 1.25 D. ax. 145° = 5/5.
1907: O. D. V. — S. 1.25 D. ⊃ — C. 1.25 D. ax. 145° = 5/5.

This patient was seen once in 1908 and again in 1911, though the miotics were employed continuously in the interim. In 1908, vision equaled 5/9 in the remaining eye (O. D.), and in 1911, 5/15. The fields were not taken on either of these occasions. As the patient was 94 years of age when the last examination was made and as there was considerable haze of the lens, the result must be regarded as being most satisfactory.

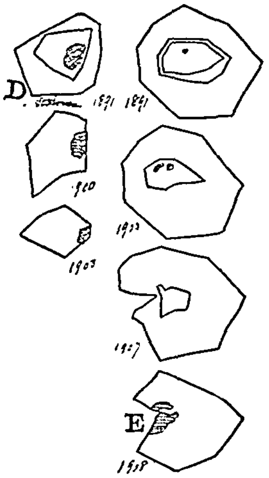


Fig. 3.—Fields of Case 3.

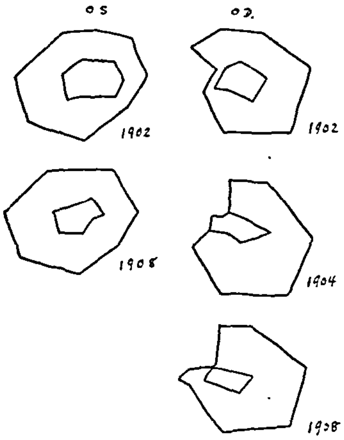


Fig. 4.—Fields of Case 4.

Remarks.—Glaucoma held in abeyance in O. D. for 18 years, in O. S. five or six years, by miotics. It is probable that a more favorable result would have been gained in O. S. had an interval of several years not elapsed during which the miotics were used irregularly. At times, during the course of the disease, subacute symptoms arose, which were promptly made to disappear by stronger doses of pilocarpin.

Case 4 (Case 4 of 1908 series).—Man, aged 51. Under observation 18 years. At time of first observation, both optic nerves hyperemic, especially the left.

O. D. + S. 0.50 D. ⊃ + C. 0.75 D. ax. 90° = 5/5.
O. S. + S. 0.50 D. ⊃ + C. 1. D. ax. 70° = 5/5.

Fields of vision normal. Left-sided neuralgia at times, with some pain in corresponding eye. Seen at intervals of one or two years. Eight years after first observation excavations in each eye noted as being suspicious, and physostigmin, 1/12 grain to the ounce, 2 drops each day, prescribed. Two years later excavations more pronounced, especially in O. D. Vision and field of vision normal in each eye. At present quite a deep glaucomatous excavation in O. D., extending to scleral ring externally. The excavation in O. S. has also become glaucomatous, being more extended but not so deep as in the fellow eye. Some contraction of O. S. field to nasal side. Tonometer shows O. D. 35 mm. Hg, O. S. 25 mm. Hg.

Case 5 (Case 6 of 1908 series).—Woman, aged 79, under observation sixteen years. Gradually failing vision in each eye for some months at time of first consultation. Gouty. Suffers from nasal catarrh. Both optic nerves hyperemic, with large temporal excavations. Sclera rigid. Anterior chambers shallow. Fields of vision normal.

O. D. V. + S. 1.75 D. ⊃ + C. 0.50 D. ax. 30° = 5/5.
O. S. V. + S. 1.25 D. ⊃ + C. 0.75 D. ax. 60° = 5/5.

The patient has been seen at intervals of six months, and, though the nerves have become somewhat atrophic and large shallow glaucomatous cups have developed in each eye, the anterior chambers shallower and tension increased, central vision and the fields of vision have remained almost normal. Considerable haze of O. D. lens with some involvement of pupil area.

Remarks.—Glaucoma developed under observation despite use of miotics, but vision and visual field have remained normal.

Case 6 (Case 9 in 1908 series).—Woman, aged 74, under observation fourteen years. Gouty. Has always suffered from head pain. At time of first consultation nerves gray; shallow physiologic excavations, that in the left eye with undermined edges. Sclera rigid. Fields normal.

O. D. + S. 0.75 D. ⊃ + C. 0.50 D. ax. 50° = 5/5
O. S. + S. 0.75 D. ⊃ + C. 0.25 D. ax. 120° = 5/5.

Second observation, a year later, when excavation in O. S. was found to be deeper and more glaucomatous in type. Head pain had persisted despite use of glasses, but there was no obscuration of vision in either eye. Vision and field still normal.

The patient then passed from observation for four years, although she had been warned of the necessity of frequent observations of the left eye and told of its glaucomatous nature. At the visit, four years later, complaint of failing vision in O. S. for a year or more was made and also of a continuance of the head pain. Examination showed a deep typical glaucomatous cup in the left eye and a shallow glaucomatous one in the right. Both nerves quite gray and walls of retinal vessels thickened. Pilocarpin, 1 grain to 1 fluidounce three times a day, with strychnin and nitroglycerin.

O. D. V. + S. 1.5 D. ⊃ + C. 0.50 D. ax. 30° = 5/5
O. S. V. — C. 0.50 D. ax. 30° = 5/7½.

During the past six years, vision and field of vision have steadily deteriorated in each eye, that in the right eye now equaling 5/15 (— S. 0.50 D. ⊃ — C. 0.62 D. ax. 110°), that of the left hand-movements in the temporal field only. There is a moderately deep cup in the right eye and tension is decidedly elevated.

Remarks.—This case illustrates that the glaucomatous process may arise in an eye in which miotics are being continuously employed, and progress, though slowly, to a considerable degree. By reason of advanced intra-ocular changes, this case was thought to be inoperable, an opinion in which Mr. E. Treacher Collins of London, in consultation, concurred, so that while the results obtained from the miotics are not all that could be desired, nevertheless they have stayed the progress of the disease very markedly, and the patient still has useful vision remaining in one eye.

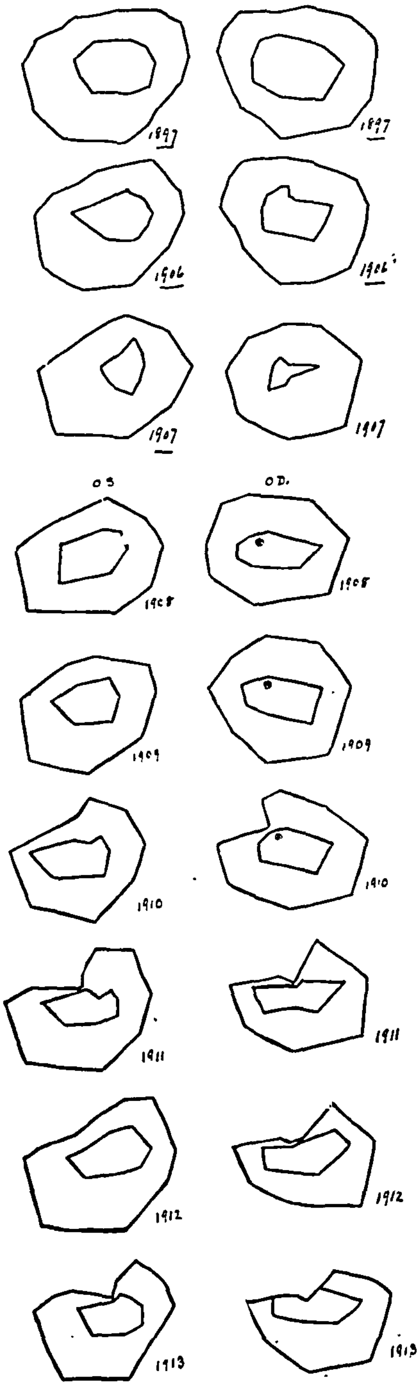


Fig. 5.—Fields of Case 5.

Case 7 (Case 30 of 1908 series).—Woman, aged 83, under observation fourteen years. History of failing sight for two years. Rheumatic. Large glaucomatous excavations in each eye, more pronounced in the left eye. T. + in each eye.

O. D. V. + S. 0.50 D. = 5/5 partly.
O. S. V. + S. 0.50 D. ⊃ + C. 0.50 D. ax. 145° = 5/5 partly.

Remarks.—As the years have passed, tension has steadily risen, with all the attendant signs of a steadily progressive chronic glaucoma. Even at the first examination, sclerosis of the retinal vessels was marked and the circulation of the optic nerves manifestly poor. Two years ago, the left eye became suddenly blind from thrombosis of the central artery of the retina, and within the past few months the temporary half of the right field has been lost as part of a hemiplegia resulting from a cerebral thrombosis. Throughout the case, there has been the complication of a large mucocele of the frontal cells, which has fortunately at all times been kept freely drained by nasal treatment. Miotics have been persistently administered, without causing any conjunctival irritation.

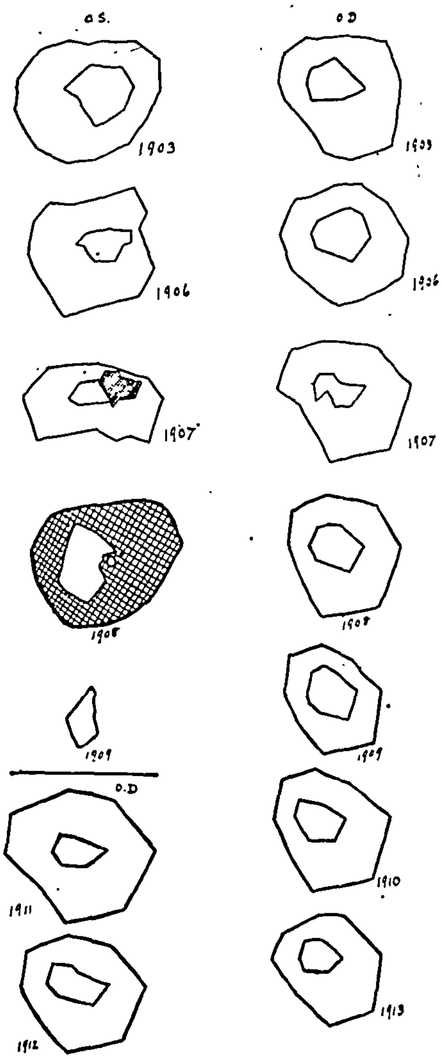


Fig. 6.—Fields of Case 6.

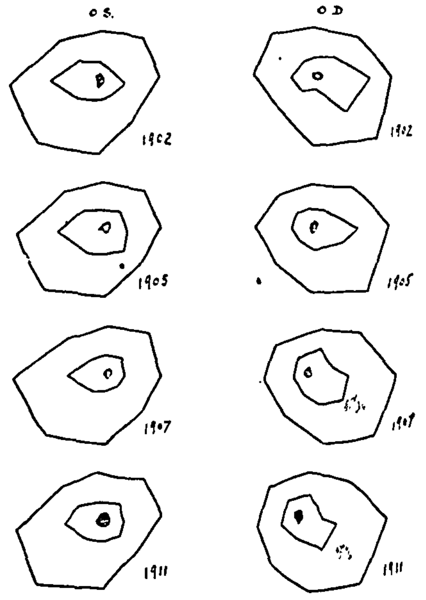


Fig. 7.—Fields of Case 7.

CASE 8 (Case 10 of 1908 series).—Woman, aged 77, under observation twelve years. At time of first consultation, vision said to have failed in each eye during the six months previous. Both nerves hyperemic, with large excavations becoming undermined to nasal side. Venous pulse. Anterior chambers shallow. Sclera rigid. Fields normal.

O. D. V. + S. 2.5 D. ⊂ + C. 0.25 D. ax. 145° = 5/5.
O. S. V. + S. 2.5 D. ⊂ + C. 0.25 D. ax. 160° = 5/5.

At end of two years cups had assumed a typical glaucomatous appearance, and tension was appreciably elevated in each eye. Central vision still normal, but form fields somewhat compromised concentrically, that for red being decidedly restricted.

At the end of six years, moderately deep glaucoma cups, anterior chambers quite shallow. Tension elevated.

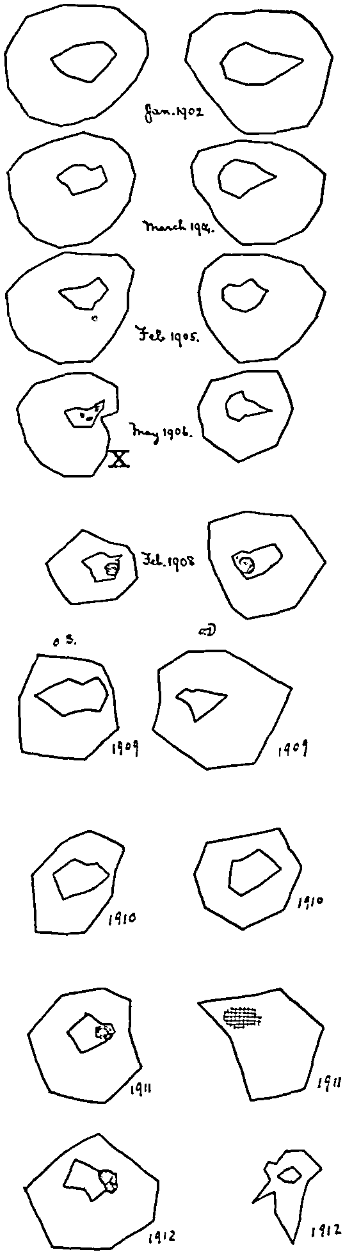


Fig. 8.—Fields of Case 8.

O. D. V. + S. 0.25 D. ⊂ + C. 0.62 D. ax. 30° = 5/5.
O. S. V. + S. 1.25 D. ⊂ + C. 0.37 D. ax. 30° = 5/5.

During the past six years, there has been a steady progression of the disease with an increasing lenticular haze. Vision reduced to 5/35 in O. D. and to 5/15 in O. S. This loss is not altogether attributable to the glaucoma, however, as the commencing cataracts undoubtedly obscure vision.

Remarks.—The patient, now aged 77, has been under observation since she was 65 years of age and still has useful vision. If central vision deteriorates further, iridectomies will be advised, with a view to enlarging the pupils, possibly decreasing tension, and to pave the way for the delivery of the cataractous lenses.

CASE 9 (Case 17 of 1908 series).—Woman, aged 61, under observation twelve years. At time of first observation, dimness in left eye of six weeks' standing. Gouty. Mother had glaucoma. Both optic nerves gray; central excavation in the right eye and a forming glaucomatous one in the temporal half of the left nerve; sclera rigid, especially in O. S.; both anterior chambers shallow.

O. D. V. + S. 0.50 D. ⊂ + C. 0.37 D. ax. 110° ≐ 5/5.
O. S. V. + S. 0.50 D. ⊂ + C. 0.37 D. ax. 70° = 5/5.

During the past six years there has been but little progress in the disease. Vision is still normal in each eye and the field is but little more restricted than it was seven years ago. Miotics have been used constantly always with a tendency to create conjunctival irritation. Patient lives at a distance, and is doubtless not careful to use only fresh and sterile drugs.

Remarks.—Glaucoma controlled in left eye, despite the considerable involvement of nerve which was present when the patient first came under observation. Right eye still normal.

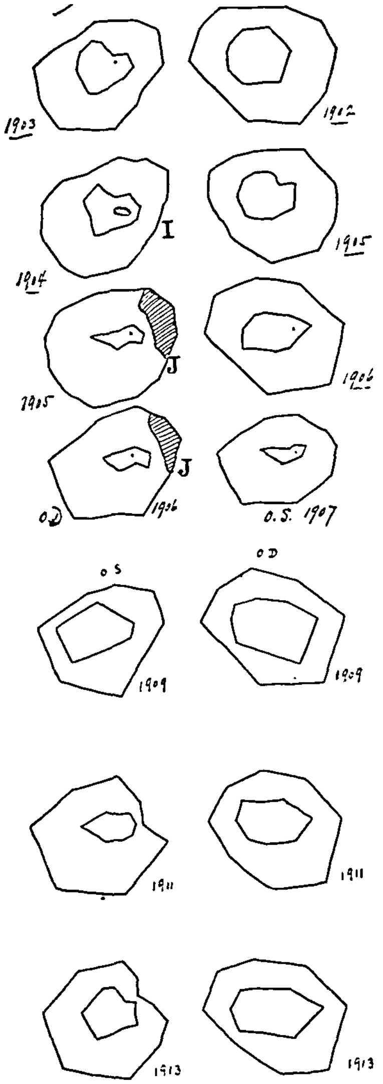


Fig. 9.—Fields of Case 9.

CASE 10 (Case 32 of 1908 series).—Man, aged 70, under observation ten years. Poor vision in right eye for some years past, following dynamite explosion. Vision of left eye totally lost at that time. O. D. V. worse past six months. Halos at times. Large glaucomatous excavation in right eye; anterior chamber shallow; pupil large; cornea maculated in pupillary area; T. +. Left eye, phthisis bulbi.

O. D. — S. 1. D. ⊂ — C. 1.5 D. ax. 180° = 5/9.

Seen at intervals of six months, miotics being increased from time to time. Now using pilocarpin, 3 grains to 1 fluidounce, 2 drops at night. During the ten years of treatment vision has practically held its own, that is, 5/15. There has been considerable loss in the nasal field, but the temporal field remains full.

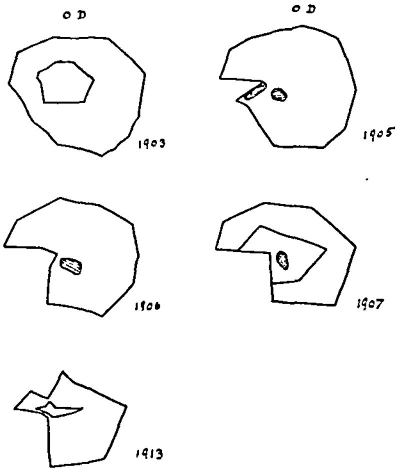


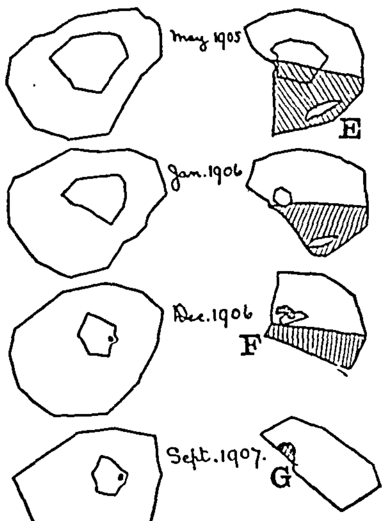
Fig. 10.—Fields of Case 10.

Remarks.—This result is exceptionally good, for the patient lives at a distance and cannot give so much care as is desirable to the conjunctiva. His health, too, has been bad, his vitality having been greatly lowered by repeated attacks of dysentery.

CASE 11 (Case 41 of 1908 series).—Man, aged 57, under observation eight years. At time of first consultation vision in right eye had been misty six months. Halos at times. Rheumatic history. Had been under ophthalmic care, but no miotics had been employed. There was a large glaucomatous excavation in right eye, with a shallower but also characteristic excavation in the left. Tension markedly elevated in both eyes. Anterior chambers shallow.

O. D. V. + C. 1. D. ax. 20° = 5/15.
O. S. V. + S. 0.25 D. ⊂ + C. 0.50 D. ax. 180° = 5/5.

Despite continuous use of miotics, vision gradually failed in O. D.; in 1909 to 5/35, in 1910 to 5/100, the reduction being occasioned by slight subacute exacerbations of the glaucoma. Operative interference rejected on account of hemorrhagic type of the disease. For the past two years the right eye has been practically blind. Vision in the left eye has been maintained at normal and the field of vision is normal. Tension, however, has increased and the cup has deepened.



Remarks.—Results from miotics disappointing in right eye, good in the left. Perhaps iridectomy in the right eye would have conserved vision longer.

Case 12 (Case 19 of 1908 series).—Woman, aged 69, under observation seven years. At time of first consultation, right eye just recovering from an iridectomy which had been done by another surgeon on account of acute glaucoma. Shallow excavation in head of optic nerve, but eye quiet and no glaucomatous symptoms. Left eye free from glaucoma, save for a doubtful excavation to outer side of nerve. Anterior chamber in each eye shallow. Tn. Fields of vision normal in each eye. Gouty subject.

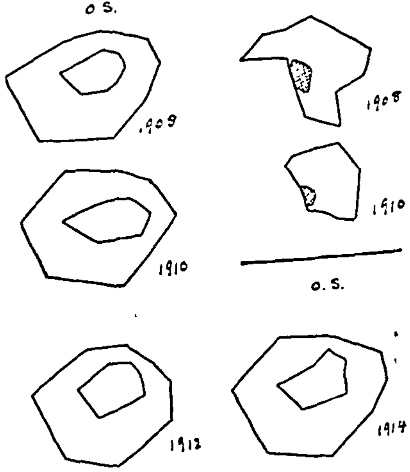


Fig. 11.—Fields of Case 11.

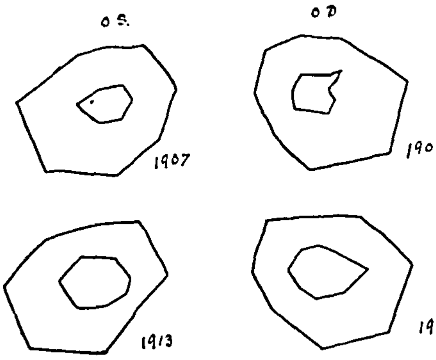


Fig. 12.—Fields of Case 12.

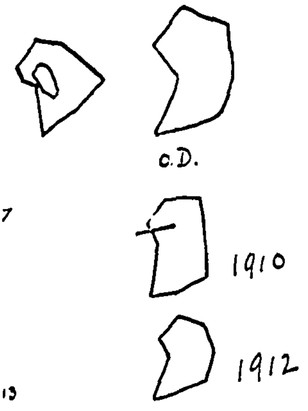


Fig. 13.—Fields of Case 13.

O. D. V. + S. 1.5 D. ⊂ + C. 1.75 D. ax. 160° = 5/5.
O. S. V. + S. 2.5 D. ⊂ + C. 0.62 D. ax. 90° = 5/5.

Glaucoma has made but little progress in either eye, as is evidenced by normal vision and fields. Miotic has been used in the operated eye as well as in the fellow, so that the maintenance of good vision in that eye may not be wholly the result of the iridectomy.

Remarks.—Despite glaucomatous outbreak in right eye, no glaucomatous symptoms have appeared in either eye, though a pathologic excavation has formed in the left eye, even though the pupil has been maintained at pin-point contraction.

Case 13 (Case 54 of 1908 series).—Woman, aged 77, under observation six and one-half years. Poor health. Advanced vascular degeneration, vision in the left eye failing five years, in the right three years. Had never used miotics, though under the care of an eye specialist for five years. At time of first consultation:

O. D. + S. 0.50 D. ⊂ + C. 0.50 D. ax. 180° = 5/7½.
O. S. V. faint light perception only.

Observation of this patient continued over a period of five years following the last report, and notwithstanding her advanced age (77 years at time of last observation in 1912), very high intra-ocular tension, the conjunctival irritation excited by the miotics, and insufficient home care, vision in O. D. has been maintained to a most remarkable degree, namely:

1907: O. D. + S. 0.50 D. ⊂ + C. 0.50 D. ax. 180° = 5/6.
1908: O. D. — S. 0.50 D. ⊂ — C. 0.50 D. ax. 90° = 5/9.
1909: O. D. — S 1. D. = 5/12.
1910: O. D. — S. 1. D. = 5/12.
1911: O. D. — S. 1.5 D. = 5/35.
1912: O. D. — S. 1.5 D. = 5/40.

As shown by the accompanying sketch, the field of vision in the right eye was much reduced even at time of first examination.

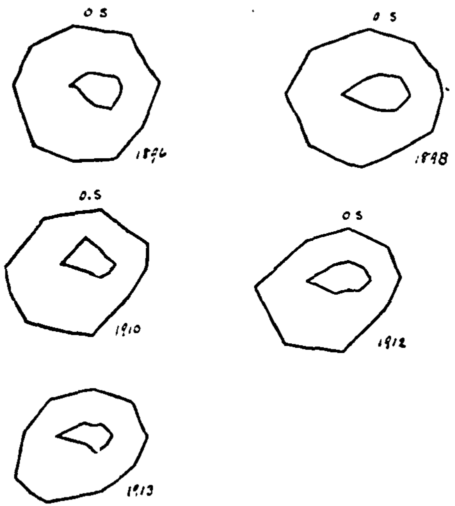


Fig. 14.—Fields of Case 14.

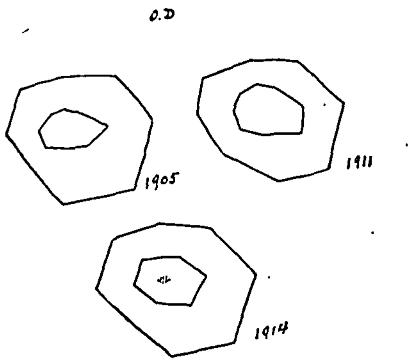


Fig. 15.—Fields of Case 15.

Remarks.—This case represents the power of miotics to retain vision for a long period even under the most desperate conditions, vision being maintained for six and one-half years in a person of very advanced years and great debility, the field of vision being greatly contracted and vision rapidly deteriorating.

Case 14.—Woman, aged 67. First consultation June 3, 1896.

O. D. V. reduced to 1/50.
O. S. V. — S. 1. D. ⊂ — C. 3. D. ax. 10° = 5/5.

Subacute glaucoma in O. D., deep cup. Commencing excavation in left eye. Iridectomy O. D., resultant vision of 2/40. O. D. totally blind two years after operation. O. S. V. now 5/7½ with — S. 0.75. D. ⊂ — C. 4. D. ax. 15°. Field somewhat concentrically contracted. Moderately deep cup. Tonometer = 38 mm. Hg. Pilocarpin has been used almost uninterruptedly during the past eighteen years, and despite the advanced age of the patient, vision is still almost normal and the field of vision fair.

Remarks.—In view of the loss of the right eye from inflammatory glaucoma, the control of the disease by miotics seems the more remarkable.

Case 15.—Woman, aged 64. First consultation November, 1904. Poor vision in O. S. for five years. Examination showed O. D. to be normal, O. S., seat of subacute glaucoma of a hemorrhagic type.

O. D. V. = 5/5
O. S. V. = 5/35

Iridectomy O. S., with resultant vision of 2/60.

During the past five years the left eye has remained *in statu quo*, while the glaucomatous process has progressed though ever so slightly in the right. Vision is still normal and the field of vision normal. During the last two years, there has been more or less irritation from the miotics, this condition being favored by a certain amount of obstruction in the lacrimal passages.

Remarks.—Notwithstanding the tendency to a hemorrhagic type of glaucoma, in the right eye, it remains practically unaffected, with normal vision.

Twenty-First and Chestnut Streets.

LATE INFECTION FOLLOWING A TREPHINING FOR GLAUCOMA [*]

E. V. L. BROWN, M.D.
CHICAGO

Just a year ago Wagenmann reported the first case of "late infection" following a sclerectomy operation for glaucoma. Since that time twenty-five observers have added thirty-eight cases, and Herbert says that the growing number of late septic infections in Europe is causing much concern. It is therefore a little surprising that only one such observation[1] has been published in this country and, believing that all allied observations on any new procedure should be published until its disadvantages as well as its advantages are thoroughly understood, I present the following case:

Patient.—W. G. F., aged 56. Vision in the left eye began to fail two years ago, in the right eye three months ago. Two months ago the left eye was entirely blind. Colored rings were seen earlier before the left eye and are now seen before the right. Lues was acquired twelve years ago.

Jan. 13, 1913: The right cornea and media are clear, iris normal, pupil 4 mm. and reacts sluggishly; the disk shows only a physiologic cupping. The retinal veins are dark and slightly tortuous. Tension normal to touch and 20 mm. Hg by the Schiötz tonometer. Right vision 3/10—1, not improved by his +1.D glass. Form field fully normal. The left anterior corneal stroma and epithelium are clouded, although the iris shows through; the direct and consensual reactions of the 4 mm. pupil are gone, the fundus gives a red reflex but no details. Tension + 1; Schiötz = 50-55 mm. Hg. No perception of light.

Physostigmin (eserin) instilled into the eyes for a few days narrowed both pupils to less than 1 mm. The further effect on the right eye greatly surprised me and proved that what I had considered to be a normal eye was in reality a glaucomatous one, for the tension decreased perceptibly to the touch and from 20 to 10 mm. according to the tonometer. The red field was now taken and found to be reduced to one-half, although the form field was normal, as before. The uncorrected vision improved from 3/10—1 to 6/10, and to 10/10 with his +1.D. The left cornea cleared and the disk was found to have a complete and total ampulliform excavation, all vessels disappearing beneath the overhanging scleral ring. Diagnosis: right and left simple glaucoma.

January 21: Trephine of the right scleral limbus with conjunctival flap and basal iridectomy.

February 7: Left subconjunctival injection of 4.5 per cent. sodium citrate to see if the tension would decrease.

February 8: Left tension not reduced.

February 11: Left tension not reduced (+ 3); cornea edematous. Physostigmin reordered.

February 12: Right tension normal to the fingers, cornea clear. The scleral limbus conjunctiva shows a 3 by 6 mm. flap-bleb straight up from the limbus between 10 and 12 o'clock. Vision, right + 1.5 = 8/10 — 4. Discharged with directions to continue the use of physostigmin in the left eye.

April 18: Patient returned twelve weeks after the operation, with the statement that three days before the right eye had suddenly become red and painful, the upper lid swollen, vision "foggy." The week before the patient had an acute cold.

Right eye: Photophobia, lacrimation and slight ciliary tenderness, marked ciliary and conjunctival injection, cornea clear. The site of the operation showed a yellowish, slightly elevated 4 mm. area between 10:30 and 12 o'clock. The anterior chamber was of normal depth, the 3 by 6 mm. coloboma above and the 4 mm. pupil area were filled with a cloudy exudate which obscured all view of fundus except for a small 0.5 mm. portion of the upper inner angle of the pupil, where a faint red reflex only could be seen. A hypopyon, 1 mm. high, 6 mm. broad, was present. The pupil did not respond to light or accommodation. The iris was dark green (left iris blue) and the vessels over the pupillary portion markedly injected. Tension 18.5 mm.

Diagnosis: Suppurative iridocyclitis.

April 19: Chemosis bulbi. Atropin revealed a brown posterior synechia at 3:15 o'clock and considerable exudate on the lens.

Five days later, under added heat, dionin and potassium iodid, the chemosis and pain were lessened and the hypopyon had entirely disappeared; a thick pad of spongy exudate almost completely filled the pupil area, the cornea was slightly clouded, lid edema marked, tension not increased. Synechiae going through all layers of the iris were found from 3 to 3:30 and from 8 to 9 o'clock.

May 10: Tension, increased for first time, not relieved by subconjunctive salt injection; anterior chamber everywhere abnormally deep; trephined area flattened. Vision, right 1/10. "Prognosis for vision bad."

May 17: Tension lower.

May 16: Vision, right 3/10; tension 40 mm. Left tension (physostigmin) 23 mm. Hg. Discharged.

SUMMARY OF CASE

An eye affected with simple glaucoma was trephined and the patient made an uneventful recovery. Twelve weeks later the patient returned with the statement that he had caught cold the week before and that the eye had become red and painful four days later. The conjunctival flap-bleb, which measured 4 by 6 mm., was yellowish and a severe suppurative iridocyclitis was present. Under treatment the hypopyon promptly disappeared and the uveitis got well in seven weeks, but a moderate increase of tension (40 mm. Hg) supervened and vision decreased from 8/10—4 (three weeks after the operation) to 3/10. The conjunctival bleb flattened down to the scleral level.

The case agrees in all essentials with those reported as "late septic infection" following sclerectomy and is therefore not worthy of extended summary and discussion. For a review of the literature the reader is referred to the article by Gifford.[2]

It is to be regretted that fluorescin was not used to determine the presence or absence of a defect in the conjunctival flap, as was done by Axenfeld and by Harms.

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[*] Read before the Section on Ophthalmology at the Sixty-Fifth Annual Session of the American Medical Association, Atlantic City, N. J., June, 1914.

[1] Gifford: Ophth. Rec., January 1914, xxiii, 1.

[2] This covers a wide range of experience in the hands of many competent observers and includes a discussion of the frequency of the infection, comparison between frequency after Lagrange's and after Elliot's operations, the interval, the influence of buttonholing the flap, the position of the trephine opening, the condition of the conjunctival bleb after operation and after infection, the factors of trauma, dacryocystitis and conjunctivitis, the use of fluorescin to detect a break in the flap, the relation of the pus beneath the flap to that within the eye, the resulting suppurative iridocyclitis and the course of the same, rises in tension, panophthalmitis, phthisis bulbi, sympathetic ophthalmia, histologic examination of the wound tract (Schur's case), Kuhnt's transplantation after buttonholing, cautery of flap, application of tincture of opium to toughen the flap, use of Roemer's antipneumococcus serum, etc.

The reports of cases published since the appearance of Gifford's article are those of Cramer, Herzau, Stock (second report), Bachstez, Herbert, Constantinesco and Pooley.

ABSTRACT OF DISCUSSION

ON PAPERS OF DRS. CALHOUN, PARKER, BROWN AND POSEY

DR. HIRAM WOODS, Baltimore: Modern medicine has put heredity into the background as the cause of disease. Numerous eye troubles show a greater or less tendency to run in families. Lattice-shaped keratitis, various lens troubles, certain forms of retinal and nerve disease, choroidal degeneration, myopia, all show hereditary tendency. Of some of these troubles, essentially degenerative, we know nothing concerning the exciting causes. Others are called into activity through something definite—infectious or otherwise—effective because of lessened tissue resistance. I have never made such observation as was narrated by Dr. Calhoun; but in two cases of glaucoma in young people, both more or less of the chronic type, there were unusual features, just as there are in Dr. Calhoun's cases. Circulatory or nerve disturbances, undiscoverable by ordinary means of diagnosis, had probably been at work before the period of hypertension. In Cases 2, 4 and 6 the essayist says the anterior chamber was "deep"; in Case 3 "very deep." Is there any significance in this symptom-complex—hypertension, deep anterior chamber and sluggish pupil? It leads me to suspect something else than glaucoma dependent on defective filtration; in other words, an indolent uveitis, with serous exudate and secondary hypertension. The mother in Case 2 had had pneumonia. Patients 3 and 5, both her children, developed tuberculosis after glaucoma symptoms. Do we know how old this infection was; how it had affected ocular nutrition; how nutritive disturbance might have brought about glaucoma symptoms? The same reasoning is applicable to the malaria from which most of them suffered. In other words, such cases take us beyond eye symptoms. We meet a problem which is becoming more and more absorbing—the biologic or biochemic factor in eye health. Heredity fixes only the tendency. Something else does the rest. Glaucoma is but a symptom, its essential being increased tension. As Fuchs explains, this depends on the relation of fluid formation to outflow. The chief anatomic changes are in the uvea. Engorgement of its vessels may exist a long time and escape detection. When it reaches a certain point, increased tension appears in an eye with a glaucomatous tendency. This may be due to inherited anatomic peculiarities. So we are forced back to defective filtration—the characteristic symptoms of which, except hypertension, were absent—or to the causes of uveal hyperemia. Inherited syphilis, infections, anomalies of metabolism, probably reflex nerve influence through the autonomic system—these are some of the things which can produce uveal circulatory disturbances, manifesting themselves all the way from functional derangement to glaucoma. We shall not understand such interesting observations until we know more about the nutritive effects of systemic exciting causes, not alone in the presence of degenerative, inflammatory or glaucomatous symptoms, but in functional anomalies as well. When there exists a family tendency, whatever its nature, this study becomes mandatory before the eye disease appears and should consist of careful search for, and, so far as possible, protection against anything known to affect eye health.

DR. JOHN E. WEEKS, New York: In determining the value of any operative procedure the careful analysis of cases with operation is essential until a very large number of cases has been so observed. Hence, we are much indebted to Dr. Parker for the compilation of the cases in which operation was done by Colonel Elliot while in this country, and the report of his own cases. With regard to the form of glaucoma for which this operation is adapted, the statistics of results by Elliott, Meller, Parker and others, indicate that the subacute and chronic forms in which simple iridectomy is least effective, are those more favorably affected by the Elliot procedure. In acute glaucoma, iridectomy, preferably performed after partial subsidence of the acute stage under the influence of miotics, laxatives and the salicylates, in the cases which can be influenced by these agents, is easier, is sufficient, and the subsequent condition does not admit of late infection. While it is applicable in some forms of secondary glaucoma, in hemorrhagic glaucoma and in buphthalmos the cases should be carefully selected. I am of the opinion that the 1 mm. trephine is too small, as it does not permit of the ready removal of iris tissue and of parts of the trephined disk that may remain. The 2 mm. trephine makes an opening that is often too large, permitting the prolapse of too much iris tissue, and not infrequently the prolapse of the anterior portion of the proximal part of the ciliary body and occasional subluxation of the lens into the opening. In my experience the 1.5 mm. trephine affords the best size opening for the majority of cases. Of course the size must be varied somewhat to suit the individual case.

While it is Colonel Elliot's custom to restore the flap without suture, my experience has been in favor of the use of the suture. In two or three cases the flap without suture has become bunched above the wound and has occasioned some discomfort to the patient. While the technic of the operation is not particularly difficult, in my hands iridectomy and the Lagrange operation are easier and the complications at the time of operation not more numerous. Of the subsequent complications that arise, iritis, hemorrhage, detachment of choroid, luxation of tissue into the wound, return of tension and late infection are the principal ones. Iritis, in my personal experience, has been very infrequent. I have employed the operation in approximately thirty cases. I have had iritis in three only and it was severe in but one. All who have studied the available statistics are aware of the fact that iritis is less frequent when the coloboma is complete.

DR. FREDERICK E. CHENEY: While a certain number of men have probably long appreciated the value of miotics in the treatment of glaucoma simplex, I think it safe to say that previous to Dr. Posey's first paper on this subject the attitude of the majority was one of considerable doubt and skepticism. Miotics, to be sure, were pretty generally used, but in a half-hearted "we must do something" fashion and the results were not as a rule satisfactory. Dr. Posey's carefully recorded cases most impressively emphasize the fact that surprisingly good results are often to be obtained if this treatment is intelligently and systematically used, day in and day out to the end of life. I fully agree with Dr. Posey as to the importance of "beginning in doses small enough to avoid creating a spasm of the ciliary muscle," though it is only exceptionally that I find it necessary to use a weaker solution of pilocarpin nitrate than 0.5 per cent. The fact must not be lost sight of, however, that, in exceptional cases, miotics tend to aggravate rather than control the disease, and it is therefore well to keep the case under careful observation until we have determined the dose that can be used without causing ciliary irritation. Another point made prominent in a certain number of Dr. Posey's cases is the value of treatment for eyes in which the disease has not become manifest. It cannot be too strongly insisted on that when a patient presents himself with glaucoma simplex in one eye and the other eye is free from the disease, the well eye should be as systematically treated and kept under as careful observation as though the disease already existed. In reply to Dr. Posey's question: In view of such favorable statistics from the use of miotics, when the risk and complication attending all operations on the eye are considered . . . is operation ever justified when both central and peripheral vision are normal without trial of what miotics can do? I must admit that in certain cases I am still favorably inclined to operation or at times operation plus miotics. The age of a patient is, it seems to me, one of the most important factors to be considered in this connection. In many cases beyond the sixtieth year we feel fairly confident that useful vision can be retained under miotic treatment until the end of life. If the patient is between 40 and 50, however, there is the probability of a much longer life, and other conditions being favorable, I am inclined to advise operation.

DR. W. E. GAMBLE, Chicago: Colonel Elliot operated on seven eyes for me before the clinical congress last year. While I have no final report to make on the results, I feel that through courtesy to him I should make some sort of a statement at this time. Two of these cases were subacute. In the first case tension has remained normal since operation; the tension in the second case is and has been for some months 12 to 14 mm. These readings were, however, not made under an anesthetic. Finger palpation showed that the tension was below normal. I am uneasy about the final outcome of this case. The vision and fields remain the same as before the operation. Of the five cases of glaucoma simplex, one was complicated by trachoma. The conjunctival flap became very edematous, necessitating a stitch, which was made by my colleague, J. Brown Loring; however, no infection followed. There were no complications whatever in the other cases.

I wish to speak of one case in particular, a case of myopia complicated by glaucoma simplex in both eyes, the right eye having become blind from glaucoma. The case has been under observation since 1911. Miotics were used continuously, the tension gradually increasing up to the time of the operation. Dr. Elliot trephined with iridectomy. Tension has remained normal since the operation, so that I feel extremely grateful to him for the result. I am sure an iridectomy without the trephining would have been of no avail. I trephined an eye with acute glaucoma in which a large bleb formed. Two weeks later the tension went up and pain returned. The eye was massaged in the region of the bleb and I was gratified next day to find the tension down and pain relieved. I mention this, as in some of these cases adhesions about the filtrating area may be the cause of the increased tension, which may be broken up as indicated above.

DR. WALTER L. PYLE, Philadelphia: Before accepting the conclusions relative to any series of cases of glaucoma, I should, first of all, want a careful study of the clinical history in each case with a detailed description of the methods of diagnosis employed. It must be remembered that increased intra-ocular tension is not the only factor in glaucoma; and in some types it is of such little importance as to be negligible. Von Graefe and his successors did not advance operative means as curative or corrective in all cases now included under the generic name of "glaucoma." Primarily, iridectomy was recommended in cases of acute glaucoma and acute exacerbations of chronic glaucoma; and at present, it is an established fact that only in such cases may satisfactory results from operative procedures be expected. In many cases of so-called "chronic simple glaucoma," the main pathologic change is an advancing sclerosis of the optic nerve; and a study of the intra-ocular tension is of small importance beside that of the visual fields for form and color, the visual acuity and the ophthalmoscopic picture. The physical changes in the anterior chamber may be almost excluded as a causative factor; and for etiology, we must look to the biochemic changes that are commonly associated with arteriosclerosis elsewhere in the body. Of course, in such cases, operation is useless and often harmful. Reliance must be made on hygienic, physical and medicinal measures, both local and general. For the last fifteen years, I have found myself subconsciously dividing the cases of suspected chronic glaucoma under my observation into two general classes: (1) those cases in which palpation of the eyeball does not noticeably cause decrease of intra-ocular tension; (2) those cases in which, even during the brief testing of intra-ocular tension, the sentient finger-tips undoubtedly elicit decreasing tension. Since the general employment of the tonometer, this classification is confirmed. In the second class of cases, even the sustained pressure of the tonometer alone will show a gradual decrease from the initial record of intra-ocular tension. In the first class the register of intra-ocular tension does not appreciably vary with the time that the tonometer is left on the eyeball.

DR. JOHN GREEN, JR., St. Louis: A description of two unusual features presented by one of my patients operated on by Colonel Elliot may be of interest. Miss A. A., aged 40, glaucoma simplex, both eyes. Right eye vision 6/12, moderately contracted field with broad annular scotoma; central field not extending more than 10 degrees in any meridian. Scleral ectasia 3 by 6 mm. and 2 mm. high, 8 mm. up and out from corneal margin. Tension 40 mm. Hg, left eye, blind, large scleral ectasia up and out. Tension 70 mm. Hg, right eye trephined, without iridectomy (iris failed to prolapse). About the end of the first week the iris assumed a peculiar greenish-brown hue comparable to the tint of an iron-stained iris. No visible hemorrhage. The iris slowly regained its normal color and at the end of six weeks was of the same tint as the iris in the other eye. I presume the discoloration is to be accounted for by staining from a minute-deep hemorrhage. The second point of interest is that the scleral ectasia gradually flattened and eventually disappeared. Six months after operation vision 6/16, tension 15 mm. Hg.

DR. LUCIEN HOWE, Buffalo: Dr. Calhoun referred to the family which I reported several years ago. I have since seen other members of the family and it has been charted down to date, with five members of the fourth generation. A family like that may seem at first to be unique. In looking into the literature I found that Love of St. Louis has tabulated these cases. On looking up his cases I was much interested to see the importance of the subject, which accords with the importance of the general subject heredity as it has developed during the last five years. I think there were eight cases in the series of glaucoma pigmentosa, which is a most remarkable condition. Those having their etiology in the condition of the muscles were very interesting. One was a nystagmus. Especially important is the sex tendency. We know that color-blindness is not only hereditary, but also goes down the male line, being frequently most marked in the first male child. The cases reported by Norris I think are the same as those of Leber, but in them also there is that same tendency to sex selection which was recently mentioned by Dr. Davenport. The study of heredity in connection with eye diseases is one direction in which ophthalmology is to advance.

DR. G. E. DE SCHWEINITZ, Philadelphia: My experience with the Elliot operation comprises about thirty operations for absolute glaucoma secondary to intra-ocular hemorrhage; glaucoma after extraction of cataract; in association with swelling of a cataractous lens; acute; ordinary chronic; subacute or chronic congestive; associated with corneal lesions, for example, staphyloma and absolute glaucoma. The technic of Elliot was exactly followed and the Stephenson trephine was used, except in one case in which the von Hippel instrument was used. I have never observed extensive hemorrhage into the anterior chamber nor purulent infection in my own cases, but have seen an infection a month or six weeks after an operation by another surgeon. Iritis occurs with irritating frequency (Colonel Elliot admits this) either in the form of a quiet iritis, with the gradual development of soft synechia, or as a sharp, ordinary plastic iritis arising at longer or shorter intervals after the operation. The cause of quiet iritis is not known: it may be due to some toxic property which the aqueous humor begets; evidently the later iritis is due to filtration of contaminated conjunctival fluid. Unless the pupil is dilated, as advised by Elliot, mydriatics should be used early. He advised atropin. I prefer scopolamin or homatropin. I am unconvinced that corneoscleral trephining is a better operation in acute primary glaucoma than a technically correct iridectomy; it is superior to the usual iridectomy in chronic non-inflammatory glaucoma, and if iridectomy fails in this disease is better than an additional iridectomy; it appears to be safer in chronic glaucoma with greatly contracted visual field than iridectomy; it is not a wise operation in glaucoma complicated with cataract, but should be thought of in glaucoma secondary to cataract extraction; it is a proper operation in absolute glaucoma but success cannot be promised; it may be repeated in the hope of preventing enucleation; it is not satisfactory in glaucoma due to thrombosis of the central vein of the retina and blindness as the result of this form; it may be tried in staphyloma with secondary glaucoma, but the outlook is not brilliant. Not alone reduction of tension, but the preservation and the restoration and the improvement of visual acuteness and the widening of the field of vision should be given prominenplace as standards in the estimation of the efficiency of the operation. The danger of prolonged hypotony must be considered.

Dr. Melville Black, Denver: My personal experience with the forms of glaucoma of the inflammatory type have led me to be a firm supporter of this operation. I have been doing it for the last three years, and I have had no failures. I am more than pleased with it from every possible point of view. During this time I have seen very few cases of glaucoma simplex, and these have been handled entirely by miotics. I use the von Hippel trephine exclusively. It seems to me to be much safer than any instrument that can be devised. It is quick, accurate, and in my hands most satisfactory.

Dr. M. H. Lebensohn, Chicago: My personal experience with scleral trephining is undoubtedly much better than with simple iridectomy, although I have to report one case of detachment of the choroid which occurred in my own practice, and one case that was reported to me by Dr. E. V. L. Brown of Chicago. To my mind the scleral trephining is the safer operation with less likelihood of injuring the lens than by iridectomy. Colonel Elliot, when in Chicago, insisted hat it is not necessary to do an iridectomy. It should be done only when there is prolapse of the iris. In every case in which you do a peripheral, or a technically correct iridectomy, as Dr. de Schweinitz says, you will be successful. I exhibited before the Chicago Ophthalmological Society a man on whom I had operated for cataract with excellent results following the extraction. A few weeks later he developed glaucoma which ran on for four months. The tension was finally reduced to 52 mm. Scleral trephining with iridectomy brought the tension down to 42, which was normal in his eye. Ten days later he had detachment of the choroid, but recovered from it, and his vision, which was 20/15 after the extraction, has remained the same. In from twelve to fifteen cases the results have been good, except in one case of buphthalmus in a child. In one eye the tension came down after scleral trephining, and went up two months later. This is the only case in which the tension did not stay down to normal. I have had these cases under observation for from six months to a year. Every case of postoperative glaucoma was combined with a broad iridectomy. An iridectomy of two-fifths or half the circumference may be done and still the tension may remain high; but my opinion is that scleral trephining is the operation of choice, in the postoperative cases undoubtedly, and in most cases.

Dr. W. Gordon M. Byers, Montreal: I have not tabulated the cases, but I can say that we have operated at the Royal Victoria Hospital at Montreal during the last three years on some fifty-three patients by Colonel Elliot's method, and the statistics go to show that our results are essentially in agreement with those tabulated by Dr. Parker. We have had no case of late infection, although I think, through one of our assistants who has followed all the cases carefully and also by our close surgeon, we have cognizance of all the results up to date. One practical point in connection with this, a minor point, which may happen to operators, is the tearing out of the flap. I have not heard anyone speak of that today. In the two instances in which I have seen that occur it has been due to the common practice of knotting the suture. I think, as a suggestion, that if the needle is simply threaded and put through this accident is not likely to occur. I prefer to replace the flap and let it go without any threading.

Dr. Allen Greenwood, Boston: When first trying Colonel Elliott's operation the suggestion was followed that if the subconjunctiva only was separated without lifting up the subconjunctival tissue a more permanent opening was likely to result, it being thought that if the subconjunctival tissue was incorporated with the conjunctival flap it was likely to fill the opening with new connective tissue and thus prevent filtration. Last February one of my patients, who had had a double trephining the previous October, ueveloped an attack of acute conjunctivitis followed by a panophthalmitis in the poorer eye. In other words, one of the cases of late infection came to me, but fortunately the other eye is still good. This patient had a thin, watery-looking bleb over the sclerocorneal opening, and since the disturbing occurrence mentioned I have tried to incorporate in the conjunctival flap all the subconjunctival tissue possible and separating the layers of the sclerocorneal corona fairly deeply; preferring to run the risk of a second trephining in a few years rather than the risk of a disastrous late infection which in my opinion is much increased by a very thin conjunctival covering. Lately I am advising my patients to use a weak zinc solution daily to help prevent late infection. I was very glad to see Dr. Parker's table as to the results of the complete iridectomy which for the past year I have urged on my students and those associated with me. Dr. Standish at a meeting of the New England Ophthalmological Society also strongly urged a complete iridectomy. I am positive, as Dr Parker's statistics show, that complete iridectomy is the thing to do. It can be performed easily through a 1.5 mm. opening. I have used that in all cases but one, in which I used a 2 mm. opening. With regard to glaucoma secondary to complete thrombosis of the vein, I reiterate what I said at a former meeting, that in my opinion any operative procedure is contra-indicated.

Dr. E. C. Ellett, Memphis: I would like to refer briefly to the demonstration so widely made by Colonel Elliot to show that actual filtration was going on in operated eyes. By pressing on the eye with a probe just above the sclerocorneal junction a pitting could be observed. As a matter of fact, every eye, glaucomatous or non-glaucomatous, operated or not operated on, will pit there in exactly the same manner. I have spoken of this matter to a number of men of keen observation who have thought I was mistaken. I am encouraged to make this statement by the fact that some one has just told me he had tried this on 300 consecutive cases, regardless of what was the matter, and the pitting was observed in every one.

Dr. L. Webster Fox, Philadelphia: I wish to confirm the opinion of Dr. Posey that miotics are of great value in the preliminary stages of glaucoma, but I have found whenever the fields of vision are contracting and the tension is increasing it is time to discuss operative measures with your patient. That may be in three months or three years. We all have had cases that continued over a long period of time, eventuating in blindness if only miotics are used. There is a certain physical condition that enters into this eye-tension that shows itself through the system, whether auto-intoxication or arteriosclerosis, it is impossible to say; but the determination of that condition is evidenced by highly increased tension and contraction of the field of vision. As regards corneoscleral trephining for glaucoma, Colonel Elliot's operation is going to save the eyes of many people. Is his operation to be followed by the majority of operators? I followed him, saw his work in England, and traveled with him to Washington and Baltimore, and in my own clinic, I saw thirty operations performed by him, and it is a difficult operation.

Great success has undoubtedly followed the performance of the various newer operations for chronic glaucoma, but none of them has given me greater satisfaction than the Elliot trephining of the sclera. As already stated, Colonel Elliot makes the basis of his triangular flap at the sclerocorneal margin, but now I have reversed this practice, and as in the Van Lint sliding-flap operation for cataract, I seize with the forceps the conjunctiva on the inner side of the right cornea, about 4 mm. below its summit, and dissect it around the upper corneal margin of the outer side; then with scissors I detach the conjunctiva from 12 to 14 mm. upward. A suture is next inserted in the loosened conjunctiva at the lowest point of the inner side. From this point I make a perpendicular incision of 4 mm. through the conjunctiva, which is continued diagonally upward and outward to a similar distance. When operating on the left eye I begin the dissection of the flap on the outer side of the cornea and make similar perpendicular and diagonal incisions upward and inward. When completed the flap is drawn over to its attached side on the eyeball, leaving a space for the trephining along the upper sclerocorneal margin.

After the trephining the conjunctival flap is replaced and by means of the suture already inserted, it is drawn downward to cover the hole in the sclera and the upper part of the cornea. From time to time I have modified the treatment of the conjunctival flap, at one time stitching it down on one side and removing the thread at the end of twenty-four hours; at another, simply loosening the conjunctiva over the corneoscleral opening and allowing it to heal, then again carrying out Van Lint's sliding flap, that is, stitching the conjunctiva on both sides of the cornea.

Dr. W. E. Lambert, New York: My experience with regard to these operations entirely coincides with the views expressed by Dr. de Schweinitz. I employed the Elliot operation under protest in one case only of acute glaucoma, as I still prefer an iridectomy in acute cases. A physician had lost one eye, and had had repeated attacks of glaucoma in the other, controlled previously by miotics. Finally these attacks occurred so frequently and the condition became so serious that an operation seemed to be demanded. After consultation I advised iridectomy or a Lagrange operation. He, however, insisted on the Elliot operation, and it was done with a perfectly satisfactory result. His vision had been reduced to 20/100. He recovered 20/30 vision, and the tension has never increased since the operation five or six months ago. Two cases of hereditary glaucoma, which are not of particular interest as hereditary cases, as they were of the second generation, have a decided interest as bearing on the paper of Dr. Posey. The first was in a young man aged 25, first seen two years ago. Vision in each eye then, 20/20, with unmistakable evidences of chronic simple glaucoma—increased tension, contracted fields, deep cupping—and an operation was decided on. A Lagrange operation was done on the poor eye, and was particularly satisfactory. The vision and tension remained normal during some weeks of observation, miotics being used in the eye not operated on. The patient disappeared. Two months ago he reappeared, with the story that he had continued the drops in his eye more or less frequently. Vision in the operated eye had commenced to fail six months previously and gradually became worse. When I saw him it was 20/100. The other eye had remained the same as two years ago. In the eye operated on, the tension had increased to 50 and I did the Elliot trephining operation. The vision, however, has not improved. The other case was one of hereditary glaucoma in a woman aged 25. The fields were normal, or slightly contracted. Operation was advised, but was not accepted. The patient has been kept on miotics and vision in both eyes has remained practically the same during the past year.

Dr. F. Phinizy Calhoun, Atlanta, Ga.: I am glad to have Dr. Woods correct the misstatement made in the paper with regard to the depth of the anterior chambers. I meant to leave the impression that the anterior chambers were not shallow. They were quite deep. Dr. Howe's case seen recently in the fifth generation is the only case that goes beyond four generations in glaucoma simplex.

Dr. Walter R. Parker, Detroit: Case 27, the last reported in my paper, was one of glaucoma simplex and had been under miotics for three years, but in spite of their use the process had continued and I did a trephining operation last November. The vision before operation was 6/9, with correction. The operation seemed to me to be technically correct. The chamber remained open nineteen days. In spite of atropin used after the third day the pupillary space filled up with exudate and vision was reduced to objects. The patient was subject to mild exacerbations. In February I did a deep iridectomy on the other eye. Vision in the iridectomized eye has remained and the process has apparently stopped. In connection with Dr. Posey's paper I wish to report one case without operation under observation for twelve years. Twelve years ago the patient had a simple chronic glaucoma. I advised the use of miotics and after two years' time, the fields being more contracted, I advised an iridectomy, which was refused. She has used miotics faithfully all these years and although the field is somewhat more contracted she has a control vision of 6/6 and the eye seems to be in good condition. Miotics should not be used except in cases which can be kept under close observation. The danger is that they may be used for so long a time as to lose the best opportunity for surgical interference. In view of the good effects occasionally gained from miotics, the difficulty of doing complete iridectomy through a trephine opening, the many good results from iridectomy and the fewer cases of iritis following in the cases in which the iridectomy is complete, it seems to me a fair deduction would be as follows: 1. Use miotics as long as the field is kept under control. 2. Following this a deep iridectomy, the earlier the better after miotics have failed. Continue the miotics after iridectomy. If this fail, then do a sclerocorneal trephining operation over the site of the coloboma. I believe that Colonel Elliot has made a valuable contribution to the treatment of glaucoma in his sclerocorneal trephining operation.

Dr. E. V. L. Brown, Chicago: I would like to refer to Dr. Cheney's case with tension of only 22 mm., and yet a glaucomatous state. The one I have just reported with late infection is also of this type, but you will note that physostigmin lowered the tension to 10 mm., and since it is known that physostigmin never lowers normal tension, it must follow that 20 mm. is for this eye a pathologic tension. I would assume that a low-grade iridocyclitis had preceded and left the eye with a tension of 10; that when obstruction of outflow occurred, with a rise to 20 mm. I think many cases of so-called primary glaucoma are in reality secondary. Has Dr. Posey definite data showing how long it takes tension of say 20 to 30, 30 to 40, or 40 to 50 mm. to develop a definite glaucomatous cup and to narrow the field and lower the vision? Since he is able to study these cases through long periods the data could be gotten together. If we are going to give up the Elliot or other operations and use only miotics, I think we should get information as to what the effect of a given tension is.

Dr. W. C. Posey, Philadelphia: In this last paper I have not attempted to make a comparison of the results following the use of miotics and those attained by operation. In a paper before the Section in 1908 I showed the results obtained were better than those by iridectomy. My opinion is that we cannot say anything about the trephining operation for four or five years; then we may be able to say that the results are as good as or better than those obtained by a simple excision of the iris. In answer to Dr. Brown, I would be able to give such figures in a few cases, but the cases which I have reported have all been from my private practice and I find I have to be careful how I use the tonometer in this class of cases. Patients beg off from it. It is not easy to get patients to remain under any one form of treatment a long while unless you convince them that unless miotics are used four times a day religiously for the rest of their days they are going to lose their sight. It is after all the vision and the field of vision that we want to conserve; it is not so much the tension that we have to think of, because, as we all know, we may have pronounced glaucomatous symptoms in eyes in which the tension is comparatively low. I feel myself that if one is going to operate, this should be done early. I operate on all my hospital cases for you cannot trust hospital patients to carry out the miotic treatment. I advise an immediate operation of some kind, the earlier the better. If a patient comes to you in advanced years with a small field and you employ miotics the chances are that the patient will see almost as well for the rest of his days. But if you operate by trephining, iridectomy or cyclodialysis, that little field may be wiped out. I advise caution in these desperate cases. Dr. Cheney has asked the question, What are we going to do with a patient of 25 or 30 years with a deep cup and a high tension? These cases are rare, but they do come to us for treatment. Will you ask that patient to use miotics the rest of his or her life? Shall we bore a hole in the sclera, subjecting the eye to danger, or shall we do an iridectomy? I believe the best thing to do in such cases is iridectomy plus miotics.

It is Not Confined to Austria and Germany.—"It has become quite a custom in Austria and Germany for a medical periodical desirous of obtaining advertisements from pharmaceutical firms to offer to produce the necessary medical papers and articles extolling the different possibilities and uses of the remedy under consideration."—London *Pharmaceutical Journal and Pharmacist.*

GRANULOMA ANNULARE

A REPORT OF FIVE CASES *

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Although the credit of having first described this affection is usually, and properly, ascribed to Colcott Fox who, in 1895, reported a case under the name "ringed eruption," the first case to be found in dermatologic literature is probably the one reported by Radcliffe Crocker a year previously as a case of erythematous lupus resembling lichen planus. Crocker soon recognized his error after seeing other cases, and proposed the name "granuloma annulare," by which it is generally known at present among English and American dermatologists.

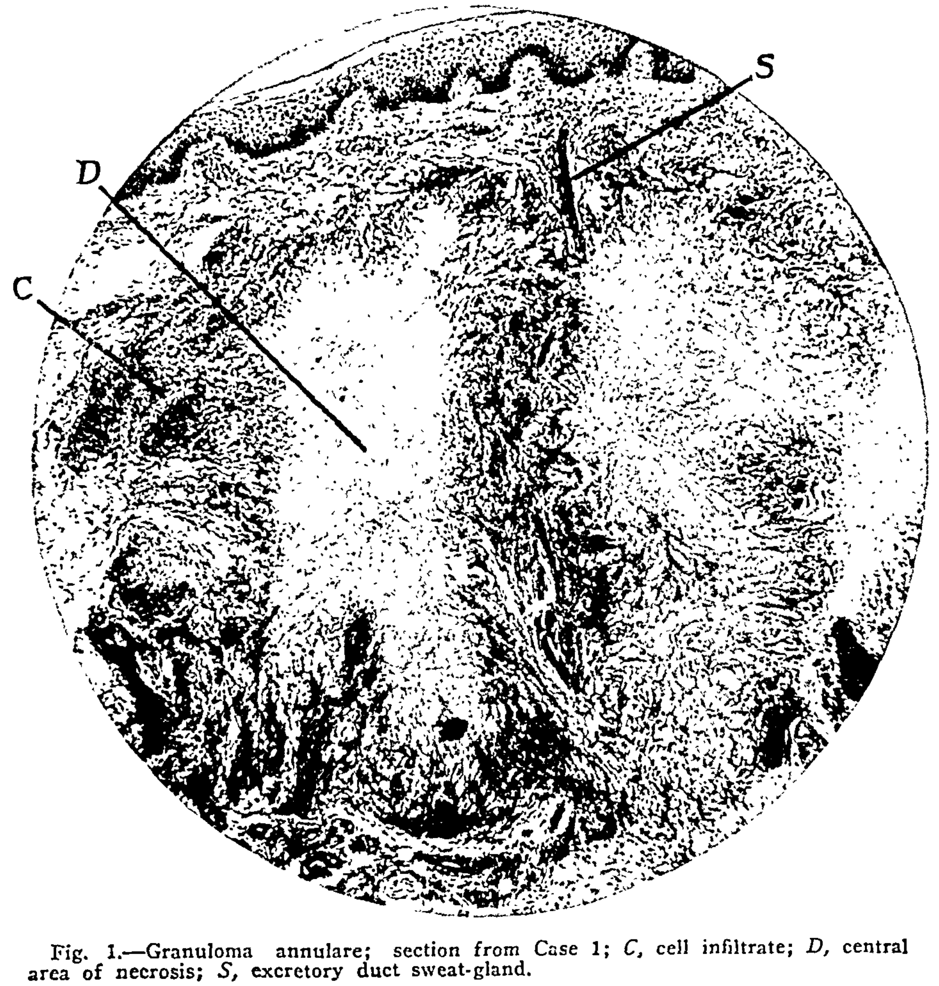

Fig. 1.—Granuloma annulare; section from Case 1; *C*, cell infiltrate; *D*, central area of necrosis; *S*, excretory duct sweat-gland.

Like so many other cutaneous affections, this one has suffered from a veritable plague of names. Ringed eruption, *éruption circinée chronique de la main*, lichen annularis (a most unfortunate name, leading to confusion since it has been already used to describe a variety of lichen planus), sarcoid, benign sarcoid, *néoplasie circinée et nodulaire, érythémato-sclérose du dos des mains, stéréo-phlogose nodulaire et circinée*, helodermia simplex et annularis are some of the names given to the malady by as many authors. The name proposed by Crocker, while not free from criticism, is descriptive, and seems in a fair way to be accepted by the majority of writers.

Although the affection is usually described as rare, Graham Little in an exhaustive paper published in 1908, had collected reports of not less than forty-nine cases, including six of his own, observed by various authors in a period of less than fifteen years; and since the publication of this paper a considerable number of additions to this list have been made by European and American observers. In view of the number of cases now on record, all of them reported within a period of twenty years, it can no longer be properly described as a rare malady. In all probability too, the reported cases by no means represent the frequency of its occurrence since, owing to the usual complete absence of annoying symptoms and the frequent insignificance of the lesions, many cases doubtless never came under the notice of a physician.

Case 1.—The first case which came under my observation occurred in the person of a girl, aged 17, who was brought to me a number of years ago; and I may say at once that it remained for a considerable time among the unclassified cases in my index. On the back of the right hand, and the dorsal surface of the index, middle and little fingers, were a number of shot to pea-sized, firm, whitish nodules, some of them isolated, others arranged in a circular patch. The nodules composing the circular patch which was situated at the base of the index-finger, were arranged about the border of a dime-sized cicatrix which had followed the destruction of a number of the lesions by a caustic of some sort applied by the patient's former medical adviser. The single lesions were the size of a split pea, were scattered about without any particular arrangement, and were situated almost without exception over the joints of the fingers. The disease had existed for two years, new nodules appearing from time to time, usually, *but not always, in the neighborhood of the old* ones which had been destroyed. Although the condition was not spontaneously painful, the patient complained much of pain if the nodules were pressed on. During the next nine months new lesions, usually single nodules, continued to appear as before, and occasionally one disappeared spontaneously. A considerable number were excised and several were destroyed by a pyrogallol plaster; at the end of another six months the disease had completely disappeared having lasted altogether about three years.

Case 2.—Anna K., aged 14, came to the skin dispensary of University Hospital in November, 1909, for advice concerning a cutaneous affection consisting of circinate patches made up of small firm, whitish nodules situated on the backs of the hands, one patch on each hand. The right-hand patch, situated over the knuckle of the index-finger formed a complete circle to which was attached a curved line about half an inch long, made up of discrete and confluent nodules; the patch on the left hand was semicircular, and was situated over the knuckle of the middle finger. The disease was not accompanied by any annoying symptoms, and had lasted about one year. After five Roentgen-ray exposures of from five to seven minutes' duration, the patch on the right hand had completely disappeared, and a similar result followed four exposures of the left-hand patch.

Case 3.—May L., aged 3, also a patient in the University Skin Dispensary, had six or eight finger-nail-sized annular patches composed of small, solid, pinkish nodules, scattered over the arms, abdomen and legs. These patches, some of which showed signs of involution, had been present for two years. The child was apparently in perfect health, and was in no way incommoded by the affection. Special inquiry was made concerning the presence of tuberculosis in any member, near or remote, of the patient's family, but the history was entirely negative in this respect. After a few visits to the dispensary the child was lost sight of, and the further history of the case is unknown.

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* Read before the Section on Dermatology at the Sixty-Fifth Annual Session of the American Medical Association, Atlantic City, N. J., June, 1914.

Case 4.—Miss B., aged 24, who was referred to me by her family physician, for two years had had a number of dime to dollar-sized nodular, ring-shaped patches situated on the back of the left hand, the flexor surface of the left wrist, both elbows and the outer side of the left ankle. All these patches, with the exception of the one on the left elbow, were made up of small bright-red, quite solid, well-defined nodules; but the nodules in the patch on the left elbow were of a dull violaceous hue, quite deep-seated, much less well defined than those in the other patches, and quite as large as small peas. Although the eruption was not accompanied by any troublesome symptoms, the patient was greatly annoyed by its presence and was extremely anxious to have it removed. After a year of somewhat indifferent treatment under her family physician but little change had taken place except that the patch on the left elbow had lost its violaceous color, being almost the color of the normal skin, and the nodules composing it were much more sharply defined than formerly. Roentgen-ray treatment was now begun, and after six or eight exposures the patch on the back of the hand had almost completely disappeared and the one on the elbow was undergoing involution. As it was extremely inconvenient for the patient to continue under my care owing to the distance at which she lived from Philadelphia, she was transferred to a physician nearer her home who was to continue the treatment. What the final result of the treatment was I have not learned.

Case 5.—In all the preceding cases the annular disposition of the nodules making up the patches was one of the most striking clinical features, although there were single nodules as well as rings in the first case. In this case, which occurred in a boy aged 6, a patient in the University Skin Dispensary, there were neither rings nor nodules, but flat, irregularly shaped and oval, pinkish plaques varying in size from a finger-nail to a Lima bean, situated on the back of the neck, the back of the hand and on the outer side of the right leg. These plaques, which were unaccompanied by any subjective sensations, had appeared rather suddenly about six weeks before the patient's visit to the dispensary. A diagnosis of erythema elevatum diutinum was made, as the case corresponded closely in its clinical features with the disease described by Crocker under that name; but the microscopic examination of an excised lesion at once made it apparent that the affection was histologically at least, identical with granuloma annulare, and it is for this reason included here. As the patient ceased attendance at the dispensary after two or three visits, the further course of the case is unknown.

Microscopic examination of several of the discrete nodules and a portion of the annular patch removed from the hand of the first case showed that the pathologic alterations were confined exclusively to the corium. Beginning in the subpapillary portion and extending down to the hypoderm was a moderately dense, fairly well-circumscribed cellular exudate composed chiefly of lymphocytes and spindle-cells of the connective-tissue type with a few polymorphonuclears and some large epithelioid cells. The exudate was densest about the vessels and the coil-glands and their ducts, the cells being especially numerous in the latter situation. Neither giant- nor plasma-cells were seen in any of the many sections examined. The most striking feature, however, was an area of necrosis occupying the central part of the exudate from which all traces of cell-elements had disappeared, and about which were numerous oval and spindle-cells arranged in radiating lines. This necrotic area was present in every section of every lesion examined, the area involved being apparently in proportion to the age of the lesion, since in lesions a few weeks old it was quite small. The elastic and collagenous tissues were apparently but little affected except in the areas of necrosis where the former had entirely disappeared and the fibers of the latter had lost their sharpness of outline, were granular in places, and stained poorly.

As already mentioned, sections were also made and examined of the plaque on the back of the hand of the case in which a clinical diagnosis of erythema elevatum diutinum had been made. The most cursory examination of these sections showed that the histologic features of the lesion were practically the same as those observed in the ringed lesions of the first case: there was the same perivascular and periglandular cellular exudate composed of round cells and spindle-cells, and the same central area of necrosis, although this was much less in extent than in the sections made from the first case, owing doubtless to the much shorter duration of the lesion, which was only a few weeks old. There was one notable difference, however, and that was the presence of many small mast-cells, a variety of cell not seen at all in the first case.

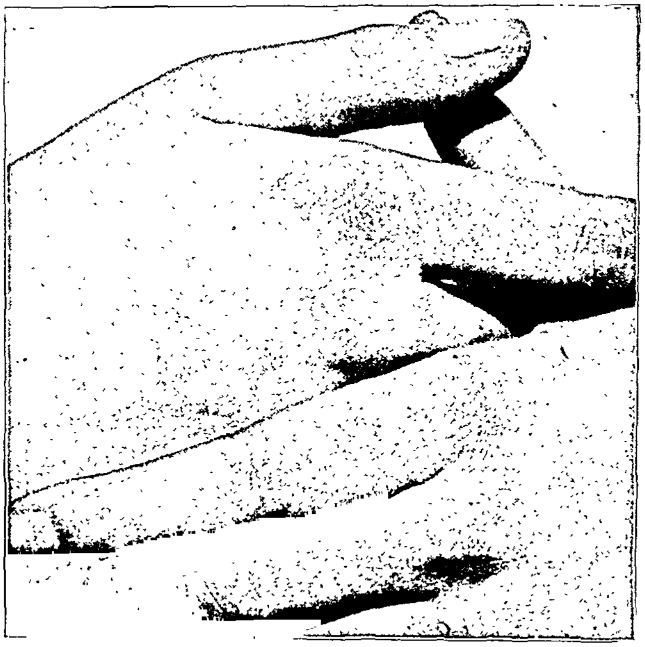
Fig. 2.—Granuloma annulare in Case 2.

A few words as to the relationship of this very interesting neoplasm to other affections.

The case reported by Rasch and Gregersen, in 1909, was regarded by them as a new type of sarcoid tumor; and Galewsky likewise described the case which he reported in the third fasciculus of the Ikonographia Dermatologica with an excellent colored portrait, as benign sarcoid tumor of the skin. Later observers, however, are practically in accord in rejecting this view of the character of the affection; indeed, its histopathology leaves but little doubt that it is in no way related to the malady described by Boeck as sarcoid.

Graham Little, to whose exhaustive study of the malady I have already referred, is strongly of the opinion that it is in some way closely related to tuberculosis, but the evidence which he presents in support of this opinion is far from conclusive; indeed, it seems to me quite the contrary. In only four of the forty-nine cases, reports of which were collected by this

Other conditions for the two lots were identical. The results obtained are given in Table 2.

TABLE 2.—RESULTS OF FEEDING PINEAL GLAND TO YOUNG GUINEA-PIGS

Control, 25 Pigs Average Initial Weight, 201.2 gm. Age, 2 Weeks			Pineal, 25 Pigs Average Initial Weight, 204.3 gm. Age, 2 Weeks		
Weeks	Aver. Wt. gm.	Gain gm.	Weeks	Aver. Wt. gm.	Gain gm.
1	198.7	—2.5	1	213.2	8.9
2	220	21.3	2	236.8	23.6
3	226.8	6.8	3	247.6	10.8
4	251	24.2	4	273.2	25.6
5	265.3	14.3	5	299.9	26.7
6	265.7	0.4	6	311.1	11.2
7	292.2	26.5	7	338	26.9
8	306	13.8	8	361.4	23.4
9	316.3	10.8	9	365.5	4.1
10	356.5	40.3	10	410.8	45.3
Average weight at end of tenth week		356.6 gm.	Average weight at end of tenth week		410.8 gm.
Average initial weight		201.2 gm.	Average initial weight		204.3 gm.
Average gain		155.4 gm.	Average gain		206.5 gm.
Gain, per cent		77.0	Gain, per cent		100.0

Excess gain of pineals over controls, 23 per cent.

This excess in weight of pineal-fed guinea-pigs over their controls is a symmetrical overgrowth. There is some increased adipose tissue, but this is generally distributed and not localized in any one region of the body. At no time has it been possible to continue this excessive growth above normal adult size. As the animals approach adult size the pineal feeding is less effective and after full maturity is attained is without effect. There has been no tendency to gigantism.

As a step toward determining the metabolic differences, quantitative urinalyses were made on twenty-four-hour composite samples of urine from the two groups.[9] With proper regard for the numerous other factors that might vitiate the results obtained from urinalyses, there is a suggestive difference in the two urines as may be seen in the summary given in Table 3.

TABLE 3.—SUMMARY OF ANALYSIS OF URINES

	Pineal	Control
Total volume collected (24 hours)	187 c.c.	160 c.c.
Specific gravity (15:5 C.)	1.016	1.019
	Per Cent.	Per Cent.
Total solids	2.51	3.02
Water	97.49	96.98
Total mineral matter	1.21	1.37
Total nitrogen	0.628	0.872
Total creatinin	0.018	0.025
Phosphoric acid (as P_2O_5)	0.065	0.043
Calcium	0.016	0.018
Magnesium	0.029	0.018
Alkalinity (as Na_2CO_3)	0.053	0.037

Chicks.—A lot of fourteen chicks was secured at the age of one week. At so early an age sex could not be determined and the lot was divided into test and control groups without knowledge as to grouping by sex. The test chicks were placed on veal pineal tissue for one week with a resultant greater growth than controls. For the next four weeks they were fed pineal tissue from old cattle, without gaining. On being placed on the original veal preparation the test chicks again grew in excess over controls.

Dogs.—The eighteen dogs employed represent four litters. Infection of these puppies with distemper interfered seriously with the weight charts of these animals. So long as infections could be kept out of the animal quarters, the test animals outgrew the controls, but the wasting from infections interfered seriously with average results over prolonged periods. It was in connection with puppies that some differences in intelligence were observed. No great import is attached to these observations, but it was noted that the pineal-fed dogs were about one month ahead of the others in their habits. They were the first to learn to lap milk, the first to respond to a call, the first to be able to find their way back to the kennel. When work on these animals was discontinued, only the pineal-fed animals were in demand as pets, and those choosing them did so without any knowledge as to differences in feeding. Of much more importance as regards increased intelligence are the favorable results reported by Berkeley,[10] who administered pineal tissue to mentally defective children and performed Binet tests as a criterion of mental advancement.

Precocious Sexual Development.—A group of forty-eight guinea-pigs was divided into test and control lots. There was an equal number of males and females in each lot, but the males and females were separated. The test pigs were fed veal pineal tissue in 10 mg. amounts daily. Feeding was begun when the animals were 2 weeks old and continued for nine weeks. The males and females of each group were then placed together in breeding-pens. As a measure of any difference in sexual development it was thought desirable to note the date of birth of young in the two lots. As the end of the approximate gestation period approached, these animals were observed as to the date of giving birth to young. All except two of the pineal-fed pigs gave birth to young before the first of the controls.† Fourteen days elapsed between the birth of young of the first pineal-fed pig and the first control pig. In all cases the young were normal and in no wise different from any other young pigs.

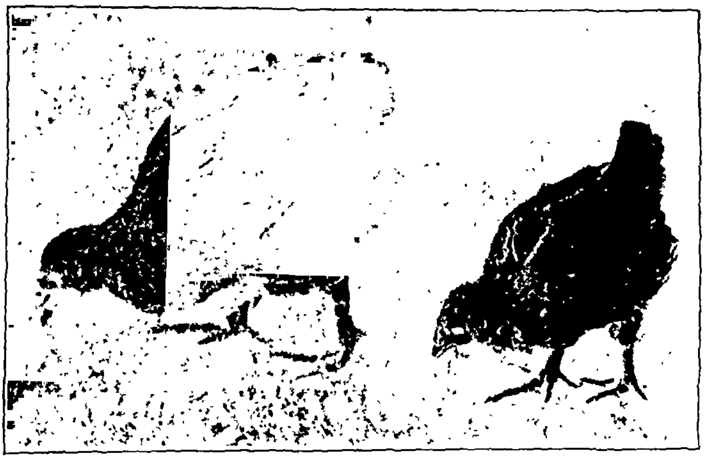

Fig. 2.—Effect on growth of feeding pineal-gland tissue to chicks. The larger chick was fed 10 mg. pineal tissue three times weekly.

COMMENT AND SUMMARY

In the foregoing records of experiments, it may be observed that some of the changes generally attributed to deficiency of pineal secretion may be produced by supplying an added amount of pineal substance. In an effort to reduce to rationality these identical findings derived from two opposing sources, the so-called destructive neoplasms of the pineal gland on the one hand, and the feeding of the gland on the other, there arise two possibilities: First, this syndrome may appear from disrupting the general endocrinous balance from either increasing or decreasing the amount of pineal secretion available for the body's use. These secondary changes in the other endocrinous glands are now in the course of investigation. Second, the cells of the neoplasms involving the pineal gland may retain some of the metabolic and other functional characteristics of the normal pineal cell from which they were derived, and the peculiar body, sexual and mental changes in patients with such tumors are all manifestations of increased rather than decreased pineal activity. One of the most frequently occurring lesions of the pineal is the adenoma, and there is abundant evidence that at times cells of adenoma functionate after the manner of the cells from which they arise. In adenoma of the liver in cases reported by Weber,[11] Rolleston,[12] Wheeler[13] and Ribbert,[14] distinct bile secretion by tumor-cells has been pointed out. Ribbert established that the bile present in such tumors was not the bile of icterus from necrotic liver-tissue by demonstrating that the scirrhous encapsulating tissue was free from bile-stain and that the bile was confined to the liver-like cells of the active tumor. In at least one case, a metastasis in the lung from the liver secreted bile. In this connection it is significant that the functionating glandular cells of typical thyroid structure have been found in thyroid metastases in bone-tissue. Furthermore, in myeloma of the bone-marrow the cytoplasm[15] of the tumor-cells contain the granules that characterize normal myelocytes, that is, the tumor to a certain extent assumes the function of the bone-marrow. All considered, it is perceived that functional activity of tumor-cells is *not* infrequent. Germane to the present contention is the statement by Hinds Howell[16] in describing the characteristics of the cells of the pineal tumors of his three cases. He says:

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[9] I am under obligations to Mr. Lewis Davis for these analyses.

[10] Berkeley: Med. Rec., New York, 1914, lxxxv, 85, 513.

† In a second series of fifty guinea-pigs observed as to sexual differences, the males and females have been kept together from birth. Some of the females to whom pineal gland tissue has been fed have already given birth to young and many others are within the last ten days of gestation. With the exception of one pig, the control animals evince no signs of pregnancy.

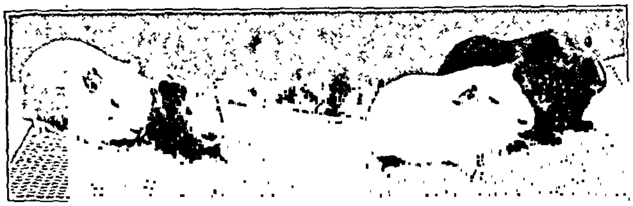

Fig. 3.—Effect on growth of guinea-pigs produced by feeding pineal-gland tissue. Control pigs to left, test pigs to right.

> A noteworthy feature is the similarity of these tumor-cells in many instances to those of the normal pineal gland.

The results of this work lead me to the conclusion that the administration of minute quantities of pineal tissue from young animals to young animals stimulates rapid growth of the body, but not beyond normal size. Also there are less well-established indications of precocity of mental and sexual development.

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11. Weber: Proc. Roy. Soc. Med. (Path. Sec.), 1910, iii, 147.
12. Rolleston: Diseases of the Liver, 1905.
13. Wheeler: Guy's Hosp. Rep., 1909, lxiii, 225.
14. Ribbert: Deutsch. med. Wchnschr., 1909, xxxv, 1507.
15. Weber and Ledingham: Proc. Roy. Soc. Med. (Path. Sec.), 1909, ii, 206.
16. Howell, Hinds: Proc. Roy. Soc. Med. (Neurolog. Sec.), 1910, iii, 65.

EXPERIMENTS ON THE CURATIVE VALUE OF THE INTRASPINAL ADMINISTRATION OF TETANUS ANTITOXIN *

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While tetanus antitoxin has proved most efficacious in the prevention of tetanus, its employment as a curative agent has been much less successful. This failure to produce more uniformly good results is chiefly due to its too late administration. Insufficient dosage and the use of the subcutaneous method have also been important factors. While the subcutaneous use of antitoxin, which at first was the usual method employed, may prove of value in large doses given within the first few hours after the onset of symptoms, nevertheless it frequently fails because of slow absorption and the time required to reach the tissues of the central nervous system. In the light of our present knowledge, this method can be justified only by an inability of the physician, for one reason or another, to give an intraspinal or an intravenous injection. The latter method is being more and more recommended, and when employed before the disease has made too much headway has given much better results than the subcutaneous.

From time to time since 1903, single cases or small series of cases have been reported in which the antitoxin has been given intraspinally. Thus Neugebauer[1] in 1905 reported forty-three cases from Continental and American sources with a mortality of twenty-two, or 51 per cent., and also three patients treated by him of whom two recovered. Many of these patients received also intravenous or subcutaneous injections or both. The results seemed to some observers to be better than when other methods were used without intraspinal dosage, but on the whole, this method of treatment has not made much headway. Experimental proof of the greater value of the intraspinal method has not until very recently been at all convincing. Permin of Copenhagen, working on rabbits and dogs, showed that local tetanus could be prevented by the simultaneous injection of tetanus toxin intramuscularly and a dose of antitoxin given in the spine, whereas with the same dose of antitoxin given intravenously, local tetanus occurred. Four hours after the giving of the toxin neither method of preventing the occurrence of local tetanus was efficacious, and when nine hours were allowed to elapse between the giving of toxin and antitoxin, the animals could not be saved.

The following series of experiments was undertaken with the object of determining to what extent tetanus antitoxin given in the spine has greater curative power, when the disease is actually established, than when given in the circulation. The comparative ineffectiveness of subcutaneous injections of tetanus antitoxin in developed cases is incidentally brought out. The use of guinea-pigs for this purpose has not been recorded so far as we know. They possess, however, a marked susceptibility to tetanus together with comparative freedom from intercurrent diseases and a certain hardihood in caring for themselves, feeding, etc., even when disabled, not shown by rabbits and other laboratory animals. The one great disadvantage to their use is the extremely small caliber of the spinal canal, for which reason a good deal of experimentation was necessary in order to perfect a technic of intraspinal dosage. Before undertaking the use of antitoxin by this method it was demonstrated by one of us (Nicoll) on dead and living guinea-pigs, that from 0.25 to 0.5 c.c. of a solution of anilin dye introduced into the spinal canal in the lumbar region rapidly finds its way up along the cord and even into the ventricles of the brain. It was then necessary to fix the effective limits of antitoxin given in the circulation as regards both the time elapsed after the giving of toxin and the dosage of the latter, and then to determine whether these limits were equaled or exceeded by intraspinal injec[illegible] It is well to emphasize at this time the fact, both [illegible]rds experimentally produced tetanus and the [illegible]n form of the disease, that a very short delay in an overwhelming infection or too long a delay in any case before beginning treatment renders the action of antitoxin, by whatever method given, valueless as a curative agent.

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* From the Research Laboratory, Department of Health, New York City.

1. Neugebauer: Wiener klin Wchnschr., 1905, xviii, 450.

It was found that two minimal fatal doses for a 350-gm. guinea-pig of a solution of dried standard toxin and the institution of treatment after the lapse of from seventeen to twenty-four hours afforded a good opportunity to contrast the value of different methods of giving antitoxin in animals showing the symptoms of tetanus.

DETAILS OF EXPERIMENTS

Technic of Spinal Injection.—After the hair was clipped, a small transverse incision was made down to the spine at the level of the crest of the ilium. The spine was then sharply flexed by an assistant while the operator introduced a small hypodermic needle between two spinous processes in the middle line, the needle being directed from above downward and almost parallel with the spinal column. Injections were made slowly and the fluid warmed. It is not advisable to give a greater volume than 0.5 c.c. at one time. Paralysis occasionally follows the operation, but usually of a temporary character. Injections into the circulation were made into the heart. The latter operation after a little experience is easily performed and produces no ill effect on the animal.

Experiment 1.—December 1, two fatal doses of toxin for a 350-gm. pig were injected deeply into one hind leg, no allowance being made for body-weight. Twenty hours later all pigs showed more or less stiffness in the inoculated leg. Each was given 250 units of antitoxin by the methods designated in Table 1.

TABLE 1.—ADMINISTRATION AND RESULT OF ANTITOXIN IN EXPERIMENT 1 *

Number	Weight gm.	Method	Result
223	320	Control	D 4 days
956	290	Control	D 4 days
283	330	Subq.	D 4 days
263	330	Subq.	D 17 days
227	290	H.	Discharged
209	300	H.	D 7 days
251	305	[illegible]	D 10 days
280	315	Sp.	Discharged
33	330	Sp.	Discharged
52	370	Sp.	Discharged
208	385	Sp.	D 4 days

* In this and the following tables, D = Dead number of days after receiving toxin; Subq. = Subcutaneously; H. = Intracardially; Sp. = Intraspinally; N = Intraneurally.

The death of Guinea-Pig 208 on the same day as the controls is in all probability to be accounted for by the faultiness of our early technic, the antitoxin probably not actually entering the spinal canal. The irregularity of the effect of the same dose of toxin on two pigs of the same weight is well shown in Guinea-Pigs 283 and 263. In the later experiments the degree of involvement of the inoculated leg at the time of giving antitoxin was carefully noted, as this factor was found to be of more importance in arriving at a prognosis than that of elapsed time alone.

Experiment 2.—January 26, two fatal doses of toxin for a 350-gm. pig were injected deeply into one hind leg, no allowance being made for body-weight. Nineteen hours later all pigs showed more or less stiffness in the inoculated leg, and were given antitoxin in the amounts and by the methods designated in Table 2.

TABLE 2.—ADMINISTRATION AND RESULT OF ANTITOXIN IN EXPERIMENT 2

Number	Weight gm.	Amount units	Method	Result
879	265	500	Subq.	D 3 days
198	305	500	Subq.	D 5 days
48	320	500	Subq.	D 3 days
664	405	500	Subq.	D 4 days
878	290	500	H.	D 8 days
211	315	500	H.	D 3 days
491	355	250	H.	D 7 days
876	410	250	H.	Discharged Feb. 20
616	310	250	Sp.	D 7 days
580	350	250	Sp.	Discharged Feb. 20
875	360	250	Sp.	Discharged Feb. 20
874	375	250	Sp.	Discharged Feb. 20

This brings out well not only the superiority of the intraspinal method, but also the great inferiority of the subcutaneous way. The one surviving intracardial case, Guinea-Pig 876, being over the standard weight, received rather less than two fatal doses of toxin.

Experiment 3.—March 12, seven pigs were injected deeply into one hind leg with two fatal doses of toxin. The amount was proportioned to body-weight of each. Nineteen hours later they were given antitoxin in the amounts and by the methods designated in Table 3, the inoculated leg being stiff in the degree noted at the time.

TABLE 3.—ADMINISTRATION AND RESULT OF ANTITOXIN IN EXPERIMENT 3

No.	Weight gm.	Cond. of Leg	Method	Amount units	Result
488	250	Stiff	Control	...	D 2 days
442	295	Slightly stiff	Control	...	D 3 days
499	350	Slightly stiff	Control	...	D 3 days
480	275	Slightly stiff	H.	100	D 13 days
498	275	Stiff	H.	200	Discharged April 10; drags leg
451	265	Fairly stiff	Sp.	10	Discharged well April 23; drags leg
479	270	Stiff	Sp.	50	Discharged well April 10; drags leg

It is to be noted that each pig received exactly two fatal doses of toxin and that the degree of tetanic spasm in the inoculated leg was carefully observed at the time of giving antitoxin. The one surviving intracardial case received twenty times the amount of antitoxin of one intraspinal case and four times the amount of the other.

Experiment 4.—March 24, eighteen pigs were injected into the hind leg with two minimal fatal doses of toxin proportioned to the body-weight of each. Twelve of these were given antitoxin in the amount and by the methods indicated, seventeen and one-half to eighteen hours later, the inoculated leg being stiff in the degree noted at the time. The remaining six were held for twenty-two and one-half to twenty-three hours after inoculation, as the stiffness was not marked until that time.

TABLE 4.—ADMINISTRATION AND RESULT OF ANTITOXIN IN EXPERIMENT 4

No.	Weight gm.	Cond. of Leg	Method	Amount units	Result
116	290	Fairly stiff	Control	...	D 3 days
42	310	Fairly stiff	Control	...	D 3 days
296	250	Slightly stiff	H.	100	D 8 days
227	275	Fairly stiff	H.	100	D 4 days
399	300	Fairly stiff	H.	100	D 5 days
316	255	Slightly stiff	N.	200	D 4 days
287	255	Fairly stiff	N.	200	D 3 days
289	280	Fairly stiff	N.	200	D 3 days
306	285	Slightly stiff	N.	200	D 3 days
59	255	Stiff	Sp.	10	Discharged April 23; normal
304	275	Fairly stiff	Sp.	10	Discharged April 23; drags leg
321	320	Fairly stiff	Sp.	10	Discharged April 23; drags leg
SIX GIVEN ANTITOXIN 22½ TO 23 HOURS AFTER INOCULATION					
102	300	Stiff	H.	100	D 5 days
10	325	Stiff	H.	200	D 4 days
272	350	Stiff	H.	200	D 4 days
263	285	Stiff	Sp.	50	Discharged April 23; drags leg
123	325	Stiff	Sp.	50	D 5 days
294	350	Stiff	Sp.	50	Discharged April 23; drags leg

This would seem absolutely conclusive of the superiority of the intraspinal method of giving antitoxin over the intravenous method. It will be noted that only those animals receiving the antitoxin in the spine were able to survive. This result is the more striking since the amount of antitoxin given them was only a fractional part of that given in the circulation. An attempt was made to give the antitoxin to four guinea-pigs intraneurally. Under an anesthetic the sciatic nerve of the affected limb was cut down on and freed from the surrounding tissues, as much antitoxin as could be introduced into the nerve sheath injected, and the remainder intramuscularly directly along the course of the nerve. Owing to the small caliber of the nerve, most of the antitoxin passed to the deep intramuscular tissues. The animals lived no longer than those receiving subcutaneous injections.

In all of these experiments no guinea-pigs were discharged from observation until there was absolutely satisfactory evidence that the disease had long ceased to make any progress. While a number of the animals, perhaps most, on being discharged exhibited more or less stiffness in the inoculated leg lasting for weeks or even months, they were nevertheless in the best of health in other respects. This condition appears to be identical with that seen in human tetanus, in which the stiffness in different groups of muscles is often very prolonged even when the patients are perfectly convalescent.

Since beginning this work, we have obtained records of four consecutive clinical cases of tetanus in which an intraspinal injection of antitoxin was given and all the patients recovered. Two of these occurred in private practice and two in hospitals. In all of them, in addition to the antitoxin used intraspinally, very much larger amounts were also given by other methods.

CASE 1.—Girl, aged 10 years. Incubation of the disease, nine days or less. Cephalic type, of great severity, with many convulsions. Six hours after the locking of the jaws, 3,000 units of antitoxin were given in the spine and 10,000 in the vein. A facial paralysis had been present, however, on the side of the head on which the wound had been received for thirty-six hours previously. In all, 52,000 units were given, with the exception of the first dose, intravenously or subcutaneously. The blood showed four units of antitoxin to the cubic centimeter at the time of the last injection, about one week from the onset of the disease.

CASE 2.—Adult, male. Incubation nine days. Not given treatment for twelve hours or more after stiffness of jaws was noted, and then 1,500 units of antitoxin were given in the tissues about the wound and intraneurally, 3,500 intravenously and 300 subcutaneously; the next day 13,000 intravenously, 8,000 intraneurally and 7,000 subcutaneously. On the third day, the patient continued to grow worse with increasing rigidity, and was given 9,000 units intravenously, 8,000 intraspinally and 7,000 units into the tissues of the wounded foot. Two days later, there was noted less rigidity and the patient was able to swallow and separate the jaws to a greater degree. On this day 7,500 units of antitoxin were given in the vein, and on the following day 5,000. The blood showed 6 units of antitoxin to the cubic centimeter at a time just previous to the final injection. The patient was discharged cured after an illness of extreme severity, twenty days after the onset of symptoms. The intraspinal injection having been given so late in the disease cannot logically receive the credit for the patient's recovery, and yet the first improvement in symptoms was noted the day following the dosage given in this way.

CASE 3.—Boy, aged 9 years. Incubation not obtainable, but not over two weeks. Symptoms present for fully two days before treatment, when he received 5,000 units of antitoxin intraspinally, 3,000 subcutaneously and 10,000 intravenously, and on the next day 5,000 units in the spine. This case, while not so severe as the others, was well marked and typical of the disease.

CASE 4.—Child, aged 6 years. Incubation ten days, 3,000 units of antitoxin in the spine in the afternoon of the day on which symptoms were noted. At the same time 1,300 units were given in the veins. All subsequent dosage was intramuscular. The case was of a severe type with many convulsions.

It may be added that during this time we have had a record of another case of great severity, incubation twelve days, in which recovery followed large doses of antitoxin given principally in the vein but also in the tissues. No intraspinal dosage was given.

While this series of four cases is entirely too small to justify the conclusions that the giving of antitoxin intraspinally was the factor which determined the favorable outcome of the disease, especially as a much greater amount of antitoxin was also administered by other methods, the results are, nevertheless, in marked contrast to the average of those obtained in a much greater number of cases after the use of antitoxin in large doses given other than intraspinally.

Permin,[2] after rendering the blood of rabbits and other animals strongly antitoxic by the intravenous injection of antitoxin, was able, nevertheless, by introducing tetanus toxin by way of the nerves, to produce a local form of the disease, from which he reasons conversely that tetanus toxin, having once reached the spinal centers, cannot be dislodged by antitoxin given by the route of the blood, and therefore, all methods of giving it for curative purposes except that of direct application to the spinal cord can have little or no effect. Now it may be conceded that when the toxin has become firmly bound to the central nervous system, dissociation by the use of antitoxin is not possible. Nevertheless, one can never know in a given case how firm this union has become, and the statement that intravenous or subcutaneous injection is useless seems to us of too sweeping a character, especially since it will be noted that in the foregoing experiments a number of guinea-pigs in which the symptoms, when treatment was given, showed every evidence of the toxin having reached the spinal nerve centers, nevertheless recovered after a large dose of antitoxin given in the blood. Furthermore, we have one case of recovery in a guinea-pig with marked symptoms of tetanus following a very large subcutaneous dose of antitoxin.

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[2] Permin, Carl: Mitt. a. d. Grenzgebiet. d. Med. und Chir., 1913, xxvii, 1.

On experimental and clinical grounds the following recommendation for the treatment of tetanus with antitoxin would seem to be amply justified: In every case strongly suspected of being tetanus, from three to five thousand units of tetanus antitoxin should be given at the first possible moment intraspinally, slowly by gravity, and always, if possible, under an anesthetic. In order to insure its thorough dissemination throughout the spinal meninges the antitoxin should be diluted if necessary, to a volume of from 3 to 10 c.c. or more, according to the patient's age. When fluid is drawn off previously to the giving of the antitoxin, an amount of the latter somewhat less than that of the fluid withdrawn should be given. A number of cases of "dry tap" have been observed in the disease by those so expert in spinal puncture as to leave no room for doubt that the canal was properly entered. In such cases only a small amount of tetanus antitoxin should be injected (from 3 to 5 c.c.). In brief, tetanus titoxin should be used in precisely the same way as meningitis serum.

Unlike experimental tetanus it must be remembered that in the human type of the disease there is frequently a focus constantly pouring out more and more toxin, for which reason it is probably advisable to repeat the intraspinal injection in twenty-four hours. While unquestionably the blood will soon become antitoxic through this intraspinal use of antitoxin alone, yet in order to insure the quickest possible neutralization of all toxins in the tissue-fluids, it would seem advisable to give at the same time, a dose of 10,000 or 15,000 units of antitoxin in the vein. A similar dose given subcutaneously three or four days later will insure a continuance of the highly antitoxic condition during the next five days. We do not believe there is any advantage in giving larger amounts of antitoxin than those indicated.

The proper and thorough surgical treatment of the wound and the use of sedatives, stimulants, etc., are very essential factors in the treatment of the disease. Finally, intraneural injections of antitoxin seem to us to be an uncertain and roundabout way of reaching the diseased nerve-centers, which may be much more simply and thoroughly accomplished by the simpler procedure of intraspinal injections.

When for various reasons tetanus antitoxin cannot be given in the spinal canal, it is far better to inject it at the earliest possible moment intravenously than to lose time in seeking skilled advice in order to give it intraspinally, which, however, should be done later. If, which is hardly conceivable, a physician is unable to give it intravenously, he should give it subcutaneously. This, though far inferior than even the intravenous way, is still of some value in early and slowly developing cases.

Note.—We have at present (July 8) two additional patients under observation each of whom is convalescent from a severe attack of tetanus. The incubation of the disease could not be obtained in either case. The antitoxin was given by the exact method and in the amounts recommended above.

315 West Seventy-Sixth Street—124 East Sixtieth Street.

Publicity.—Publicity is educational; it is a safe policy; it inspires confidence; it is a public health right. If the town is a breeding place for malaria, let it be known. If the water supply is bad, publish it. The city authorities will get to work and the taxpayer will feel an immunity from disease.—O. Dowling in *Ohio State Med. Jour.*

VESICOVAGINAL FISTULA AND RECTOVAGINAL FISTULA *

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This article is necessarily in large degree a recapitulation of my surgical studies carried on during a series of years, reports of which have been published from time to time.

Soon after returning from my medical studies during 1869 and 1870 in the University of Berlin, it was my exceptional good fortune to become the student of J. Marion Sims of New York. Much of his operative success was dependent on his rare skill in the use of silver wire as a suture. Even to this day I suppose he is best known by its successful application as a suture in the cure of vesicovaginal fistula — a success attributed by himself to the great value of silver-wire sutures. Mere reference to the monumental labor of Dr. Sims for the cure of this distressing condition is sufficient here, since every surgeon is familiar with it.

The first cure effected by him was only after thirteen previous operations. These repeated experiments were made possible, first by his indefatigable persistence, and second, by the fact that a slave woman, who was rendered practically valueless by her affliction, and who had little to say as to the desirability of the operation, was his subject. The cure was effected only after four years of repeated failures.

Dr. Sims[1] reported this case in 1852. It was the beginning of a long series of most remarkable contributions to gynecic surgery. The study of this case led him to devise the Sims speculum, first improvised on occasion by using a large iron spoon, the handle of which was bent to a right angle with the bowl. I have always been at a loss which to admire most — the wonderful inventive genius, or the very uncommon surgical technic displayed by this most original surgeon. For a long period I endeavored only to imitate, never venturing to modify, or hoping to improve on any of his operative procedures. This contribution of Dr. Sims furnishes in itself little that is especially new or important.

Dr. Hayward[2] of Boston published an elaborate article in 1839, and so far as I have been able to learn, he was the first operator, at least in America, to report a cure. He said:

> I introduced a bougie from the urethra through the fistulous opening with the patient in a lithotomy position. I incised the whole of the cicatricial tissue about the orifice and dissected the membrane of the vagina about half an inch away from the wound. This was done, partly to present a large surface and partly to prevent carrying the needle through the bladder. Three interrupted sutures were tied tightly and each thread was left about 3 inches long.

In 1851 Dr. Hayward[3] reported that he had performed the operation twenty times, but it was done on nine patients only, one being operated on six times, another five, two twice and five once.

In 1847 Dr. Pancoast[4] of Philadelphia reported two successful cases. He attributed the cure largely to what he called a "tongue-and-groove" method of coaptation of the freshened surfaces. One side of the wound was split, separating its surfaces for about ¾ inch. The opposite side was pared to fit and the four raw surfaces were firmly held in apposition by sutures which were allowed to remain for two weeks. A catheter was retained in the bladder with frequent irrigation.

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* Read before the Section on Obstetrics, Gynecology and Abdominal Surgery at the Sixty-Fifth Annual Session of the American Medical Association, Atlantic City, N. J., June, 1914.

[1] Sims, J. Marion: Am. Jour. Med. Sc., January, 1852.

[2] Hayward: Am. Jour. Med. Sc., August, 1839.

[3] Hayward: Boston Med. and Surg. Jour., April 16, 1851.

[4] Pancoast: Med. Examiner, May, 1847.

In 1847 Dr. John Peter Mattauer of Virginia published his method for the cure of vesicovaginal fistula, using lead for suture material. He advocated its advantages in three ways:

> First, the means which I use in exposing the vagina. Second, the introduction of a new suture which lies embedded in the tissue for an indefinite period without cutting its way out as do silk ligatures. Third, a self-retaining catheter. He reported six successful operations.

For an indefinite period of the past, metallic sutures have been used for a great variety of purposes. In my edition of Percival Pott — London, 1763 — the use of gold and lead wire is described in operations for the cure of hernia. Dr. Pott states that metallic sutures, both gold and lead, were used by Albucasis and others as early as the eleventh century.

It is hardly just to speak of Dr. Sims without simultaneous recognition of the admirable ability of his colaborer, Dr. Thomas E. Emmet. The specially curved scissors bearing the name of the latter were devised for the purpose of dissecting away the posterior protective layer of the vagina for the cure of rectocele and for the reconstruction of the perineal structures. The extraordinary skill of Dr. Emmet in the use of these scissors was noteworthy. He would dissect back and forth, denuding the whole posterior vaginal wall by the removal of a single unbroken strip, as the practiced housewife pares an apple.

Probably no subject pertaining to gynecic surgery has been written on by a larger number of contributors, expressing a greater variance of opinion, than the treatment of vesicovaginal fistula. The difference of judgment has been in large measure due to ignorance of the anatomy and physiology of the pelvic floor in woman.

Both Sims and Emmet considered the silver-wire suture the important factor contributing to cure in diseases of this region. This was doubtless owing to the fact that nearly all such wounds were in greater or less degree subject to septic infection.

My old friend, Dr. E. W. Jenks of Detroit, called my attention in 1880 to his modification of the Sims-Emmet denudation. As he then explained his method, it consisted of a preservation of the posterior mucous membrane of the vagina, holding it as a flap for the protection of the wound from uterine and vaginal secretions. In his article,[5] Dr. Jenks describes his operation as follows:

> I use neither tenaculum nor tissue-forceps, but with the part tense, snip a hole in the mucous membrane in the median line, close to the integument, and then inserting the scissors with a cutting motion into the hole made, I continue to dissect the mucous membrane away from adjacent tissues without removing the scissors, first going up the septum as far as desired and then laterally, first on one side and then on the other, without removing the scissors, or once bringing their points from beneath the mucous membrane. Then, with blunt scissors, I cut away the dissected flap.

In putting his technic into effect, I soon learned that he was doing better than he knew, in that he separated the thinned-out posterior vaginal muscle from its adjacent structures. Not only was this easy of accomplishment, but also ready access was given thereby to the ruptured, separated, transverse muscles, and to the greatly enlarged and weakened levator ani. The retention of the separated portion of the vaginal muscle made it possible to make and maintain an aseptic wound and to restore the sundered parts by buried, continuous, absorbable sutures.

As a natural sequence, this process greatly simplified and assured safety in the cure of rectovaginal fistula, by suturing the bowel wound and the vaginal opening separately. The operation for the restoration of the perineum was thus reduced to its simpler factors. In the publication of this operation in 1907, I described it as follows:

> In rectovaginal fistula, the perineal structures have usually been so greatly injured that it is better to divide at once what may remain of the sphincter ani muscle. The separation of the vagina and the rectum must be widely made, devitalizing the structures as little as possible. The first step of the operation consists of refreshing the old cicatricial portion of the rectal wound. These edges must be coapted with especial care. I prefer the double shoemaker's stitch, with eye of the needle near the point, using a fine, carefully selected tendon. The suture is inserted a quarter of an inch above the upper angle of the wound, and the stitches are taken with extreme care to include the coats of the intestine, excepting of course the mucous membrane.
>
> This line of suture coapts and turns toward the bowel on either side a full quarter of an inch of the well-vitalized structure. The suture is continued externally to include a part of the sphincter muscle. The ends are left long temporarily, the better to secure control of the structures in the subsequent steps of the operation. The divided vaginal tissues are sutured in precisely the same manner. This having been completed, the final steps of the operation are the same as those for the restoration of the perineal tissues when uncomplicated by rectal fistula.

The admirable operations devised by Dr. Sims for cystocele left little room for improvement. I shall never forget his enthusiastic description of his procedure. He said:

> My primal purpose was to resect the lower segment of the protruding bladder [cystocele]. To my astonishment, on cutting away the greatly thickened structures, I found my wound was limited to the hypertrophied anterior vaginal wall, and that the bladder could be easily separated from it. I thought these structures of sufficient strength, by a careful coaptation, and by holding in place for a considerable time by silver-wire sutures, to effect a cure. You can judge of my delight when I found such restoration was usually permanent.

In the further study of cystocele in conjunction with my researches on the cause and cure of hernia, I found the cystocele not seldom dependent on injury to the floor of the pelvis, producing a hernia of the bladder. To effect its cure, I separated much more widely the anterior vaginal wall from the bladder, in order to gain free access for the restoration of the strong anterior pelvic fascia. The ease which the separation gave for a free manipulation of the bladder itself was a surprise.

An extended series of cases of wounds of the bladder within the pelvis, in which a careful closure with absorbable animal sutures enabled me to secure a perfect cure in every instance, led to the deduction that wounds of the bladder in the lower pelvic strait might be subject to similar easy cure. The technic is delicate, but had been equally well devised by the great masters already quoted, emphasis being laid invariably on the importance of never permitting the suture entirely to penetrate the viscus of the organ.

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[5] Jenks, E. W.: Am. Jour. Obst., 1879.

Here again, the buried absorbable suture proved indispensable. I soon learned that the fine properly chromatized kangaroo tendon was a very important factor of success. Applied with a fine needle, without cutting edges, the eye near the point, set in a handle, it is not difficult to coapt the wound accurately with a continuous suture and reinforce it with a second layer, daintily adjusting the external wall of the bladder over the first line of sutures. This effected, the anterior wall of the vagina is carefully sutured and a catheter retained for a certain period. I have had the remarkably good fortune to secure primary cure of vesicovaginal fistula at the first operation in every instance. I attribute it to the fact that the wide separation of the fundus of the bladder puts the parts at complete rest, as the contraction of the vaginal muscle can have no part in producing tension on the sutures. This conclusion is worthy of special emphasis, since I consider it of basic importance as the especial factor of cure. The through-and-through suturing of both the bladder wall and the vaginal muscle includes important parts having different functions, the contraction and expansion of which are necessarily on different planes. It was a great surprise to me at first that bladder wounds on the intraperitoneal portion have from time immemorial been the *bête noire* of the profession.

If my conclusion is correct, the operation above described claims the careful consideration of the profession. In a paper[6] on this subject before this Section of the American Medical Association in June, 1907, I wrote as follows:

> In the surgery of the bladder from within the abdomen, I was at once impressed by the ease and certainty of repair, giving in every instance a rapid cure. This led me to the conclusion that the pelvic portion of the bladder wall was difficult to repair only because of its close attachment to other structures having different functions. On this account the wound cannot remain at easy replacement and rest—essential factors of cure. I obviate this complication and reduce the problem to its simple factors by separating the bladder wall broadly from its attachments from below and close the wound of the bladder with a fine, double, continuous, buried tendon-suture, inverting and supporting the structures by a second layer. The vaginal wound is then closed by a continuous buried suture. A catheter is retained for some days in order that the structures may remain at rest. Of course, there are no stitches to be removed, and when the wound has been made and retained aseptic, cure is to be expected.

The aseptic coaptation of tissues, alike in structure and function, is of primary importance and should be accepted as a surgical maxim. Sims believed that the properly applied silver suture was the basic factor in the cure of vesicovaginal fistula. We recognize its value in infected wounds which must heal by granulation.

I consider that the primal factors to be accepted as fundamental in importance are the making and maintaining of an aseptic wound held in easy retention and rest by buried absorbable sutures.

180 Commonwealth Avenue.

ABSTRACT OF DISCUSSION

Dr. J. Wesley Bovee, Washington: I am glad to hear that Dr. Marcy advocates the separation of the vagina from its attachments for the closure of these fistulas. This subject was brought prominently before the professional world by George Gray Ward a few years since, and while he may not have been the first to do it—as I presume many of us had done it before that time—it certainly is the only efficient method for treatment of especially large fistulas. Some of these tax us, especially those in which the urethra is destroyed as well as the base of the bladder. We often see marked failures from other methods. In one case coming under my care two months ago, the patient had had during the past eight years eight operations for vesicovaginal fistula, all unsuccessful. One was a transperitoneal transvesical operation by a general surgeon. The woman had not passed her urine through the urethra in eight years. She had had a hysterectomy performed and the injury of the bladder was the direct cause of the fistula. In this case I did an operation by this method with perfect success. The suturing is done by this method plus the use of the Pesser catheter for from eight to twelve days. This insures practical success in all cases of this type.

Dr. Henry O. Marcy, Boston: This operation has been elaborated by me, I think, originally, and it involves a good many years of work. The last publication I made on this subject was before this section in 1907. It is practically that which I have given you to-day. In all my operations since 1907 I have not had a single failure.

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[6] Marcy, Henry O.: Plastic Surgery of the Pelvic Structures, The Journal A. M. A., Nov. 30, 1907, p. 1831.

THE HECHT-WEINBERG REACTION AS A CONTROL OVER THE WASSERMANN REACTION

A STUDY BASED ON ONE THOUSAND PARALLEL TESTS WITH BOTH METHODS *

R. B. H. GRADWOHL, M.D.
ST. LOUIS

The massed statistics of Wassermann workers have shown clearly that this reaction, following the classic technic of Wassermann, using the most exact methods of titration of all the reagents, working with the most sensitive antigens whether cholesterinized or not, is *not uniformly present in all cases of manifest* syphilis from a clinical point of view. While we have proved its undefinable value as a diagnostic symptom in many cases of occult syphilis, still we must admit that at times it is consistently negative in many syphilitic conditions. There are times, too, when the reaction disappears entirely independent of treatment. At such times, the serologist is unable to assist the clinician in his efforts to arrive at a correct diagnosis or to check treatment. The disrepute into which the classic Wassermann has at times fallen in the estimation of some practitioners is not so much from the errors that have been so frequently made by incompetent serologists as it is from the *negativity* of the reaction in cases that display unquestionably syphilitic aspects, either cutaneous or visceral.

We have, therefore, been compelled to look to some other test to use, either as a substitute for the Wassermann, or, at least, as a sensitive control of the reaction in cases in which the Wassermann is absent. One of the main objections that has been raised against the test in some quarters is the fact that the straight Wassermann technic embodies the use of an amboceptor or hemolytic serum made by injecting sheep's blood into rabbits and using sheep's corpuscles as the basic material around which the remainder of the reaction is made to revolve. This objection has been well taken; for we know from actual investigation that nearly every individual carries in his blood-serum some quantity of antisheep amboceptor resultant from the ingestion of mutton. The number of people who have natural antisheep amboceptor is large. In this country my own figures show, from routine examinations, that 98 per cent. of the American people harbor greater or less quantities of this substance. Granting that this is true, we are forced to admit that a Wassermann reaction carried out in the case of an individual with a high amount of natural antisheep amboceptor and a low amount of syphilitic antibodies will usually result negatively even though the individual is syphilitic.

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* Read before the Section on Pathology and Physiology at the Sixty-Fifth Annual Session of the American Medical Association, Atlantic City, N. J., June, 1914.

My attention was first called to this fact some months ago by the admirable work of Leredde and Rubenstein in Paris, who convinced me by a review of their data that the failure to obtain a positive Wassermann reaction in many cases was due to the presence of an undue amount of natural antisheep amboceptor in human serums. Leredde and Rubenstein, reporting a parallel series of tests, using both the straight Wassermann technic and a method which utilized the natural amboceptor in unheated human serums (namely, the Hecht-Weinberg test), showed that the latter test developed a positive reaction in 10 per cent. more cases of syphilis than did the Wassermann. Again, it has been argued that the heating of serums to 56 C. (132.8 F.), such as is practiced in the Wassermann technic for the purpose of ridding the serums of natural complement, develops *complementoid* substances which naturally give a false conclusion. Again, it has been asserted that the heating of serums destroys a part of the syphilitic antibody on which the reaction depends. It is for these three reasons that Hecht and Weinberg developed a technic that utilized the amboceptor and complement present in practically all blood-serums and refrained from heating the serums by using "active" or unheated serums. The method of Margherita Stern is designed to utilize the natural complement of blood-serums but pays no attention to the natural amboceptor—a serious drawback to the most accurate information for the clinician.

The observations of Hecht and Weinberg, Leredde and Rubenstein and Levaditi convinced me of the advisability of following out the technic of Hecht and Weinberg for purposes of control. Leredde's figures are based on a parallel series of blood-tests in 1,636 serums. My own investigations are confined to 1,000 parallel observations. The technic of Hecht-Weinberg, which I have worked out, is the following:

Place in a rack fourteen small test-tubes. The first ten of these tubes are used to determine the hemolytic index of the suspected blood. By this we mean the exact amount of hemolytic amboceptor present in the given blood-serum. The last four tubes are used in the actual test. Add 0.1 c.c. of fresh unheated patient's blood-serum to each of the first ten tubes. Then add decreasing amounts of normal salt solution to these tubes, beginning with 1 c.c., then 0.9, 0.8, 0.7, 0.6, 0.5, 0.4, 0.3, 0.2, 0.1 c.c. to the succeeding nine tubes. Next, add increasing amounts of fresh 5 per cent. suspension of sheep's blood starting with 0.1 c.c. and ending with 1 c.c. Place the rack in the water-bath for one-half hour. The tube which last shows complete hemolysis constitutes our "hemolytic index;" if it is Tube 4 our index is 4, because this tube had received 0.4 c.c. of sheep's corpuscles. The index determines the amount of sheep's corpuscles to be added to the last four tubes. The first three tubes (11, 12 and 13) constitute the tubes for the actual test, while the last tube in the rack (Tube 14) serves as our serum control tube. Tubes 11, 12 and 13 receive, therefore, the patient's serum, the proper amount of sheep's corpuscles (dependent on the hemolytic index) rising strengths of antigen, but no complement and no amboceptor. Tube 14 receives only sheep's corpuscles but no antigen. In our technic we use 0.1 c.c. of a diluted antigen determined by titration in Tube 11, 0.15 c.c. antigen in Tube 12 and 0.2 c.c. in Tube 13. In order to equalize the volume of fluid in all these tubes, we add 0.2 c.c. normal saline to Tube 11, 0.15 c.c. to Tube 12 and 0.1 c.c. to Tube 13, and 0.3 c.c. to Tube 14. The tubes are then agitated and placed in the water-bath for half an hour. These last four tubes are filled at the time we make the additions to the first ten and are left with them in the water-bath for one-half hour for fixation of complement, the rack is then taken out and the hemolytic index computed. If the index is low, say from 1 to 4, we add 0.1 c.c. of sheep's blood to the last four tubes. If the index is between 5 and 7 we use 0.15 c.c. sheep's blood and if it is between 7 and 10 we use 0.2 c.c. In our experience in this country we have never found an index above 10, although in France it is not uncommon to obtain an index of 15 or 17.

If the patient's serum has an index below 3, we regard the reaction as of doubtful value. If it is above 3, we regard it as absolute. The reaction is read off exactly as is the Wassermann, that is, inhibition or non-inhibition of hemolysis.

This method utilizes the natural complement present in nearly all human blood and the natural amboceptor present in at least 98 per cent. of blood-serums. If the amount of complement or natural antisheep amboceptor is very low, we can add the proper amount of guinea-pig's serum or rabbit's immune serum, ascertained by preliminary titration. The particular advantage of this test is the fact that we are dealing with unheated serums, avoiding the chance of the development of complementoid substances. I wish to state, in passing, that the Hecht-Weinberg test has never been found negative in any blood-serum which showed a positive Wassermann, but it has frequently been found positive in blood-serums that show a negative Wassermann. Thus, its advantage can readily be seen. We do not offer these conclusions for the purpose of eliminating the Wassermann, but we do most candidly confess that provided there is sufficient natural amboceptor present, it has superior advantages to the Wassermann. Our practice is to perform both tests, one serving as a check on the other.

The group of cases in which the amount of natural amboceptor in human serums seems to play a definite rôle in making a Wassermann appear negative and a Hecht-Weinberg positive, comprise the following:

1. Cases of ocular syphilis.
2. Cases of visceral syphilis, particularly of the liver and heart.
3. Cases of syphilis that have received intensive but inadequate treatment.

4. Provocative cases in which we are seeking to revive a Wassermann in suspected cases.
5. Cases of monosymptomatic tertiaries.

In general, in cases of what might be termed "limited" syphilis, this modification will be found of great use. With Leredde and Rubenstein, Latapie, and Hecht and Weinberg, I believe that the use of the Hecht-Weinberg test as a control over the Wassermann will bring to light many cases of occult syphilis about which the clinical diagnosis is often uncertain. Our rule is to do both tests, and as a result of this practice *we can offer a series of one thousand cases in which the Hecht-Weinberg was positive 15 per cent. more often than the Wassermann.* We regard this "dissociated reaction" as diagnostic of syphilis. The series studied represents every phase of true syphilis from the primary stage through secondary, tertiary and so-called metasyphilitic conditions. We regard the Hecht-Weinberg test as the best modification that has come forward to serve as a check on the classic method of Wassermann, Neisser and Bruck.

803 North Garrison Avenue.

UNUSUAL CASE OF FATAL POISONING FROM THE ADMINISTRATION OF MALE-FERN AS A VERMIFUGE

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On May 8, 1911, while in Colorado Springs on an investigation for the United States Bureau of Animal Industry, I had an opportunity to attend a necropsy on a man who had died from the effects of an overdose of the oleoresin of male-fern. Some of the features of the case are so unusual that it deserves greater publicity than was accorded it at the time it happened.

The victim of the poisoning, E. M. C., was a young man, 23 years old, who lived on a ranch near Woodland, Colo. He was always hungry and was feverish at night. He had taken two or three 8-ounce bottles of a remedy for "worms" prescribed by a so-called "Quaker doctor" of Joplin, Mo. The remedy was to be taken after missing three meals, one dose being taken at night and double the evening dose in the morning, followed by a dose of salts. This medicine had made him sick and kept him in bed for a day; but he had found something in the feces which he thought was a piece of tapeworm. This specimen was sent to the grandmother at Joplin, who took it to an "Indian doctor," who pronounced it the largest tapeworm he had ever seen and supplied either the medicine or a prescription for it, the evidence on this point being uncertain.

The treatment was administered Sunday, May 7, 1911, the patient going without supper Saturday night. At 6 a. m. Sunday he took half the medicine sent him and at 7 he took the remainder. The first dose nauseated him and he continued nauseated after the second dose. The medicine caused a considerable diarrhea. At 9 a. m., as directed, he took 1 or 2 ounces of castor oil and 20 drops of turpentine. The patient got worse constantly, but as he and his family had been informed that the medicine would make him very sick, they were slow in taking alarm. At last when the boy's eyes took on a staring appearance and he seemed about to go into convulsions, a doctor was summoned. At this time the patient seemed to be in great agony; he had a distressed and anxious look and the face was flushed. He was very thirsty, but was allowed only sips of water. Convulsions came on about 1 p. m.

Dr. Creighton of Manitou, who was first summoned, found the boy on the bed, unconscious, the eyes glassy and insensitive to the touch and the pupils dilated. He was writhing, but the body was rigid in tonic contraction. The jaws were set and he was unable to reply to questions. This was nearly 2 p. m. On the history and symptoms, Dr. Creighton diagnosed the case as poisoning and tried to wash out the stomach with a solution of Epsom salt through a stomach-tube, but the jaws were too rigid. He then sent for Dr. Beck of Manitou, who arrived in fifteen or twenty minutes, and they administered 25 grains of chloral and 30 grains of potassium bromid. No relaxation followed these, nor did a dose of apomorphine produce vomiting. Later, when the pulse was failing, the breathing becoming more labored and the patient cyanosed, they administered digitalis, strychnin and nitroglycerin but again with no response. The rectum was washed out with water and glycerin. Ten minutes before death they sent for Dr. Hanford of Colorado Springs, but while he was on his way the patient died, death taking place about 3:30 p. m. The rigidity of the patient increased up to the time of death and rigor mortis was pronounced at once.

The necropsy was conducted by the El Paso county physician, Dr. E. L. McKinnie of Colorado Springs, the necropsy work being done by Dr. Lewis H. McKinnie of Colorado Springs. The necropsy was the day after death and at this time the rigidity and cyanosis had disappeared. Both lungs were edematous, the right one intensely congested and the left one only slightly less so. The liver was enlarged, the spleen somewhat congested but not markedly enlarged. Both kidneys were congested, the right one being very large and having two ureters. The upper portion of the intestine for about 3 feet from the pylorus was hemorrhagic and intensely inflamed. There were other inflammatory areas lower in the intestine and the stomach was congested. The heart was of normal size, somewhat flabby and presenting evidence of mitral insufficiency.

An analysis of the stomach contents by Mr. G. C. Lake, the city chemist of Colorado Springs, showed the presence of a substance identical with the dregs left in the bottle containing the medicine furnished by the "Indian doctor." This substance, judging from its color and the characteristic odor, and from the purpose for which it was administered, was undoubtedly oleoresin of male-fern. According to the testimony of the city chemist, there is no adequate chemical test for this substance, but to one familiar with it the odor is unmistakable. Santonin was found absent. The substance left in the bottle had the characteristic color and odor of male-fern. Apparently male-fern was at least the principal ingredient and there was certainly an overdose, enough to cause death.

The stepfather and the mother had watched the evacuations of the patient after the administration of the medicine and while there was a sediment in the watery stool, there was nothing resembling a tapeworm. Slitting the intestines at the necropsy disclosed nothing of the sort. The description of the fragment of supposed tapeworm sent to Joplin suggests a spurious parasite bearing a superficial resemblance to a tapeworm. The fact that the "Indian doctor" identified it as a tapeworm is no evidence at all, especially in view of the fact that no worm was passed subsequent to the passage of the fragment, and nothing of the sort was found on necropsy. The fact that this doctor called himself an "Indian doctor," advertised in the papers, and guaranteed to remove tapeworms, according to the testimony, shows distinctly what status should be assigned to him. Even reputable doctors in ordinary practice are none too sure of their ground when dealing with fragments or supposed fragments of parasites. On one occasion a physician detained a patient from taking a steamer to Europe while he rushed a fragment of supposed parasite to the Bureau of Animal Industry at Washington for identification. The fragment indicated that the patient had been drinking lemonade, as it was the pulp vesicle of a lemon, and a telegram to this effect was sent the physician. Similar cases are by no means uncommon.

The coroner's jury found that the deceased in the present case came to his death from poisoning due to male-fern procured from a certain person known as the "Indian doctor" of Joplin, Mo. The striking features of the case are, first, that the patient probably had no tapeworm and so met his death partly as the result of stupidity of diagnosis, and second, that the "doctor" should send a poison as powerful as oleoresin of male-fern, evidently in amounts in excess of the usual dose, to be administered to a person in another state, and further to order that the male-fern be followed by castor oil, a procedure known to increase the absorption and toxicity of the drug, the patient's death in consequence being directly due to extraordinary stupidity in treatment. There is always the evident possibility that such persons as this "Indian doctor" will cause the death of the person who trusts their preparations; it is worth while to put concrete cases of the sort on record as an aid to those who would keep others out of danger.

SHOTGUN WOUND OF ABDOMEN, WITH RUPTURE OF PREGNANT UTERUS

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Patient.—F. F. (No. 193531), an Italian woman, aged 36, married, housewife, was brought to the Accident Department of the Massachusetts General Hospital, Jan. 25, 1914, at 7:45 p. m., by the police ambulance of a neighboring town. No history was obtainable from the patient on account of her unfamiliarity with the English language and her condition of shock. It was said that she had been shot with a shotgun at close range about thirty minutes before entrance.

Physical Examination.—A well-developed and well-nourished woman in considerable shock, moaning, but conscious. Skin somewhat clammy; mucous membrane pale; pupils equal, regular and reacting normally. Size and position of heart normal; sounds regular and of fair quality; no murmurs heard. Lungs clear and resonant throughout both fronts, backs not examined. Abdomen somewhat distended, with an irregular, lacerated wound in the lower half, the larger portion of which was in the right lower quadrant. The wound was very irregular in outline, with much laceration and shredding of the tissues of the abdominal wall; its longest diameter was transverse, and it was of a size to admit two fists into the abdominal cavity. Protruding from it were two or three coils of the small intestine, approximately about 3 or 4 feet in length. A portion of the bowel lay in contact with the table when the patient was first seen. Blood oozed freely from the wound. In the right groin, about 2 inches below Poupart's ligament, were two small punctured wounds about 2 mm. in diameter, with slightly irregular and infolded edges. No powder burns were seen. No wounds of exit could be recognized. Left leg and foot were moderately swollen, pitting on pressure and apparently associated with numerous varicosities of veins and venules in the lower leg and foot. A pelvic examination was not made. There was no bleeding from vulva. Knee-jerks were equal and active. Temperature 98.6. Pulse 63.

Sterile towels, wet with hot salt solution, were immediately applied to abdomen to cover intestines. Morphin sulphate, ¼ grain, and camphorated oil, 30 minims, were given intramuscularly and 1 pint of normal salt solution was injected under the right breast. Preparations were made for an immediate operation.

Operation.—Ether anesthesia. Moist sterile towels were placed over the protruding intestines, and the skin of the abdominal wall prepared with benzin, iodin and alcohol. Examination of protruding bowel revealed about forty small perforations scattered along from 2 to 3 feet of the bowel, and in some places shot could be palpated in the bowel wall. Gas and a slight amount of frothy fecal matter exuded from some of the perforations. The perforations were infolded with purse-string sutures of silk, several being included in one suture in many instances. At one point this infolding caused a marked constriction of the lumen of the intestine, but gas could be squeezed through. The intestines were carefully washed with warm salt solution and replaced. There was considerable hemorrhage in the abdominal cavity. Exploration showed an enlarged uterus with a rent in the anterior wall about 4 inches long. An umbilical cord protruding from the wound in the uterus led to a fetus, estimated at about four months, which was lying loose in the abdominal cavity. The placenta was removed from the uterus manually, and the uterine wall closed with No. 2 interrupted chromic catgut sutures. The patient was given one ampule of sterile ergot subcutaneously. No other intra-abdominal injury was found. The abdominal cavity was irrigated with warm saline solution. One cigaret-wick was placed to the right iliac fossa and one to the pelvis. The fascia, muscle and peritoneum of the abdominal wall were closed in a transverse direction in one layer with No. 2 interrupted chromic catgut, after the lacerated edges of fascia and skin had been trimmed away. The skin was loosely approximated with interrupted silkworm-gut, with two cigaret-drains to the subcutaneous tissue. Patient's pulse at the end of operation was 84. She was sent to the ward in surprisingly good condition and placed in Fowler's position, with rectal saline seepage.

Postoperative History.—The patient made a steady and uneventful convalescence. There was some sloughing of the edges of the wound with separation of the skin. This was later closed by secondary suture, with local anesthesia. A few stray shot were removed from the superficial layers of the abdominal wall and groin. These corresponded to about No. 7 bird-shot. March 10, 1914, the patient was discharged to the Convalescent Home in excellent general condition, with a very small granulating wound. Two weeks later she was discharged from the Convalescent Home, the wound being entirely healed and solid, without evidence of hernia. She was in excellent general health and was able to walk about and upstairs without difficulty. Bowels moved normally, and the uterus had undergone normal involution.

Remarks.—An interesting point in this case was that while the direction of the wound in the abdominal wall was distinctly transverse, the uterus was ruptured in a longitudinal direction and no marks or shot wounds of any kind could be found on the body of the fetus. It would seem that the rupture of the uterus was the result of a bursting strain rather than of actual perforation by the shot. The withstanding of a very considerable loss of blood without particular evidence of shock may be accounted for by the pregnant condition of the patient.

205 Beacon Street.

Salvarsanized Serotherapy.—Bériel and Durand emphasize that if the serum is drawn soon after the salvarsan has been given and is then injected into another person, this is not serotherapy but chemotherapy, as more or less of the drug is still in the serum and there has been time enough for the antibodies to be generated in response to the action of the drug. In their clinical work in this line they always allow two or three days to elapse before drawing the serum for therapeutic use on another patient. In their communication in the *Bulletins et mémoires de la Société medicale des hôpitaux de Paris*, they relate their experiences in this line with intraspinal injection of serum from persons who were just entering on the second stage of salvarsan two or three days before. They keep the serum for twenty or forty-eight hours, heat it to 56 C. (132.8 F.) and then make the intraspinal injection in cases of tabes or paresis. They report encouraging results to date.

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SATURDAY, JULY 18, 1914

THE PART PLAYED BY NUTRITION IN PREGNANCY AND DEVELOPMENT

In a recent discussion[1] of the relative parts played by heredity and food, respectively, in the development of the fetus, it was pointed out that, although the nutrition of the mother has a great influence on the offspring, the size does not appear to be materially modified by the liberal supply of any one element. In the case there referred to, although a high calcium ration, containing over five times as much lime as the standard ration used for comparison, was added in the food of the mother during the entire period of gestation, no evidence was gained that the skeleton of the fetus was increased in any dimension or in calcium content thereby.

It does not follow, however, that because an overabundant supply of any essential element fails to induce undue development of any parts in which it is specially concerned, an adequate administration of suitable nutrients is without any advantage. It is true that food cannot be regarded in any sense as the supreme cause of growth. Nutrition can only give the growth impulse free play. The old idea that protein is the determining factor in growth has been abandoned in the sense that it causes development. On the other hand, we must not forget that without protein or without any other necessary tissue constituents development is possible only so far as the requisite materials are produced anew by the maternal tissues, in the case of prenatal growth, or furnished by the sacrifice of the maternal store of them. Accordingly the food factor in development may begin to manifest itself not where the supply is both suitable and abundant or even excessive, but rather where it is scanty and inappropriate.

To what extent the ration fed to the pregnant mother may affect the general development of the fetus is interestingly shown in recent experiments at the Iowa Agricultural Station in Ames.[2] Comparisons were instituted between the young of swine fed in some cases on corn grain alone, in others on the same basal ration together with such additions as were suggested by the chemical nature of the foregoing food. Corn (maize) is markedly deficient in calcium and quite low in protein. The maize protein is, furthermore, deficient to a considerable extent in some of the essential amino-acids. This is especially true of the protein zein which comprises practically 58 per cent. of the corn proteins and does not yield tryptophan, lysin or glycocoll among its amino-acid derivatives. The marked preponderance of zein in corn greatly lessens the general efficiency of the protein *in toto*. To supplement the inferior protein of the corn and make the ration more complete from the amino-acid point of view, blood-protein was employed as an adjuvant to the basal ration by the Iowa investigators, and the mineral deficiency was remedied by administration of calcium carbonate. In the normal body there is just about two-thirds as much calcium as nitrogen, that fundamental element of protein on which the maximum emphasis is usually placed by feeding experts. Therefore, the requirement of calcium deserves most careful consideration among the mineral nutrients.

The Iowa experiments have given a significant answer. The addition of calcium salts to the fixed ration of corn and common salt for pregnant young sows resulted in new-born pigs having greater size, more vigor, bigger bone, increased coat-quality, better coat-color and higher condition. The addition of the blood-protein was effective in the same directions, its influence being more marked generally than that of the calcium addition alone.

The effect of qualitative adjustments in the character of the diet on postnatal growth has lately been demonstrated by Osborne and Mendel,[3] who have shown how the dietary inefficiency of zein hinges on the peculiarities of its amino-acid make-up. When zein serves as the sole source of nitrogen in the ration, nutritive failure inevitably follows sooner or later. This is not due simply to a failure to digest the protein or to absorb its cleavage products, that is, its amino-acids. When the missing amino-acid tryptophan (or a tryptophan-yielding protein) is added to zein, it may suffice for maintenance, since this amino-acid is indispensable and its absence from the diet cannot be made good within the organism itself. The missing amino-acid lysin will not replace tryptophan in making maintenance possible. On the other hand, inasmuch as new construction of tissue can proceed only when all of the necessary amino-acids are furnished, in the case of zein the missing lysin, as well as tryptophan, must be supplied before growth takes place.

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[1] Heredity versus Food in Development, editorial, The Journal A. M. A., June 6, 1914, p. 1813.

[2] Evvard, J. M.; Dox, A. W., and Guernsey, S. C.: The Effect of Calcium and Protein Fed Pregnant Swine upon the Size, Vigor, Bone, Coat and Condition of the Offspring, Am. Jour. Physiol., 1914, xxxiv, 312.

[3] Osborne, T. B., and Mendel, L. B.: Nutritive Properties of the Proteins of the Maize Kernel, Jour. Biol. Chem., 1914, xviii, 1.

It happens fortunately in human nutrition that the diet supplied to the pregnant mother and the growing young is not restricted to a single protein of the inadequate type represented by the principal protein of maize. Variety as well as liberality in the diet as a rule makes for safety and efficacy in respect to the suitability both of the protein and of the inorganic ingredients. These facts cannot be too vigorously emphasized at a time when calories furnish the text for most discussions on nutrition.

THE NUTRITION OF THE CARDIAC MUSCLE

It has been calculated that the heart obtains at least one-third of its energy from the oxidation of carbohydrate.[1] This experimentally established conclusion may serve as the basis for the discussion of a possible dietetic treatment of "heart-weakness," so far as this involves a functional inadequacy of the myocardium. As muscles work preferably by utilizing the available carbohydrate of the organism, and vigorous muscular performance is known to reduce considerably the quantity of the stored glycogen and the circulating sugar, it is quite logical to ask if the heart-muscle cannot be fortified in its activity by ensuring for it an abundant supply of carbohydrate.

From the fact that the level of the sugar-content of the blood tends to remain constant in health and under ordinary conditions of exercise, and, furthermore, that sugar is promptly eliminated when any excess above the usual level continues to circulate, it may be teleologically assumed that a supply of carbohydrate ample to maintain its needs is usually furnished to the heart. It by no means follows, however, that the nutrition of a weakened or overworked heart-musculature is equally adequate. Indeed, it is easily conceivable that the administration of an overabundance of sugar might act as a wholesome source of recuperation to a depleted organ. That is, it may be that blood of normal or undernormal composition with respect to sugar-content is not ideally adapted to supply most advantageously the needs of a diseased myocardium constantly taxed to its utmost by the physiologic demands of the circulation and frequently by the added stimulus of administered heart-drugs.

It is impossible by means of oral administration of carbohydrate to increase the sugar-content of the blood supplied by the systemic circulation to the heart except in a minor transitory degree. The liver stands between the alimentary tract and the general blood-stream as a clearing-house through the portals of which the sugar must pass and from which its distribution is regulated by the hepatic glycogenic functions. Although, judging from several clinical reports, sugar may be used successfully by way of the mouth to strengthen the heart-muscle, it is, nevertheless, probable that introduction by other channels than the digestive tract affords the surest means of supplying carbohydrate directly to the active musculature. By means of subcutaneous injections and intravenous infusions sugar can be made to enter the circulation promptly; and these, along with the action of drugs which induce a hyperglycemia, constitute the essential ways of testing the hypothesis of the interrelationship of the impaired myocardium and its carbohydrate supply.

Considerations like the foregoing induced Büdingen[2] to study the effect of direct sugar therapy on patients with suitable cardiac conditions. The administration of the sugar was carried out with isotonic (5.4 per cent.) solutions of glucose either by rectal introduction or intravenously. The clinical records of typical cases reported show an unexpectedly favorable outcome in many instances. It would be most premature to herald them as convincing proofs of the success of the procedure referred to, and for this reason we have not commented on the indications and the findings in detail. The well-known variability in the behavior of patients with heart-troubles, the unquestionable influence of the psychologic factors, the widely prevalent combination of drug treatment with physical and dietetic therapy — in other words, the large number of variables which must be taken into account in evaluating clinical evidences of improved cardiac conditions warn against generalizations. Every newly proposed method of treatment promptly finds interested advocates in the period of early enthusiasm for a new and promising idea. Time, criticism and accumulated experience usually serve to bring to light various shortcomings and limitations, complete failures or explanations which may quite upset the fundamental hypothesis.

The infusion of sugar solutions into the blood, quite aside from its possible usefulness, is by no means a simple procedure. It must be carried out with surgical precautions, with freshly distilled solvent and sterile materials; and even then it may be dangerous. A quart of an isotonic glucose solution furnishes at best no more than two ounces of sugar, from which not much can be expected with respect to contributed energy-supply. But emergency measures may be heroic; and the fact that suggestions like those just published by Büdingen seem far-fetched need not condemn the underlying ideas to oblivion so long as they can serve to arouse an interest in the underlying defects rather than the superficial symptoms of cardiac weakness. Pulse-records, roentgenograms and electrocardiograms are, after all, only incident to the fundamental pathologic problem.

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[1] Sugar in Cardiac Metabolism, editorial, THE JOURNAL A. M. A., June 13, 1914, p. 1895.

[2] Büdingen, T.: Ueber die Möglichkeit einer Ernährungsbehandlung des Herzmuskels durch Einbringen von Traubenzuckerlösungen in den grossen Kreislauf, Deutsch. Arch. f. klin. Med., 1914, cxiv, 534.

RABIES AND DOG-DAYS

The coming of the "dog-days," especially if the season happens to bring with it one or more prolonged heated periods, attracts the attention of the public generally much more to the danger from rabies than do definite reports of the spread of the disease at other seasons of the year, which ought to arouse solicitude. Boards of aldermen, city councils and town officials of other kinds wake up from the most absolute lethargy with regard to the disease at this time, and, especially in the smaller towns and country places, pass ordinances and revive regulations requiring dogs to be muzzled while on the streets. This is all the more amusing because the term "dog-days" has, as we have pointed out before, no reference to dogs, but is borrowed from the Romans, who called Sirius, the brightest of the fixed stars, the dog-star. At one time during the Roman epoch, the rising of this star coincided with the rising of the sun in the latter part of July. The twenty days preceding and twenty following this conjunction were for the Romans *dies canis*, the days of the dog — or the dog-star. Rome had its fiercest heats usually during this period; therefore, the time was dreaded and came to have the reputation of an unhealthy season, though not with any special reference to the dogs of Rome.

In accordance with that tendency which is often so marked to substitute some apparent etymology for the real significance of a term, in our day the popular meaning of the "dog-days" is that dogs are especially likely to go mad at this time. The consequence is that, while the animals are made uncomfortable by nose muzzling, their discomfort is greatly added to by the foolish dread which keeps people from giving them water or caring for them properly. A fact which is very well illustrated by a recent startling report from Seattle is that rabies may occur at any season of the year; the actual statistics show greater frequency of the disease during the winter than during the summer months. The affection is most common usually in the early spring, and March and April would be a much better time to select for "dog-days" in the popular sense than the weeks of July and August that have by misapprehension come to be looked on as the special period of danger.

The Seattle epidemic shows how much of real danger there is from this disease when it gains a foothold because of neglect of proper precautions. Surgeon Lloyd[1] of the Public Health Service recently reported that up to the beginning of June there had been 361 cases of canine rabies in the city of Seattle since the outbreak of the disease began in September, 1913. Up to this the disease had not been observed in Seattle. Indeed, some of the inhabitants of the Puget Sound region have been accustomed to emphasize the healthfulness of their climate and soil by calling attention to the absence of rabies. On the other hand, many who wished to minimize the value of laboratory experimentation on animals were quite ready to declare that the absence of rabies in these Puget Sound cities and towns was evidence that there was exaggeration, to say the least, in the report of the occurrence of the disease in other places, due to the overweening interest of laboratory workers. Nearly one hundred of the Seattle cases have been proved positive in the laboratory and the clinical course of the disease in a great many of the other cases has been so typical as to leave no room for doubt as to the genuineness of the affection under observation.

This is what may occur practically anywhere in this country if the infrequency of the disease begets overconfidence and neglect. Although we disapprove the infliction of unnecessary suffering on animals, the popular dread of dogs during the misunderstood dog-days affords to physicians an educational opportunity too good to be lost. This is the time when they may profitably emphasize the need for special precautions with regard to the spread of rabies. The problem of the control of rabies is mainly the care of stray animals and especially of those that have no proper owner, but live more or less on the bounty of the community. Careful registration of animals and the destruction of those for which no one would assume responsibility to the extent of paying a yearly license would greatly limit the disease. The problem is simpler in England, but the success in practically obliterating the disease for the last twenty years in that country shows what can be accomplished. We need intelligent, persistent scientific interest to prevent the spread of the disease and not the annual attack of hysteria that inflicts cruelty without accomplishing any good purpose.

BUTTER-FAT IN INFANT-FEEDING

The methods of the artificial feeding of infants vary from decade to decade in accord with new findings in the physiology and pathology of nutrition and with the theories that grow out of them. It is not long since "percentage feeding" had its vogue, and the food for the infant was prepared with strict regard to the proportions of the nutrients as they are believed to exist in human milk, and quite independent of qualitative considerations. The cereal preparations, early introduced into use in infant-feeding, lost their popularity in view of the apparent success of the newer schemes for modifying cow's milk with respect to the relative quantities of its components. Gradually, however, attention became directed to occasional untoward results after feeding modified milk that was often quite rich in fat. Among others the German pediatrist Czerny and his school laid the responsibility for many cases of malnutrition in infants on such diets to the presence of the milk-fats. Many an infant fed on a theoretically ideal modification of cow's milk showed symptoms which promptly subsided when the fat was omitted and carbohydrate-containing substitutes were offered. Buttermilk, skimmed milk, cereal preparations, malt products and the like found their way into use as the pendulum of opinion swung away from the conventional cream-containing dietaries.

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[1] Lloyd: Pub. Health Rep., June 1[illegible], 1914.

Dr. Niemann of the University Children's Clinic in Berlin has raised the question as to the wisdom of this trend of practice away from the use of milk-fats in the nutrition of the infant. A one-sided dietary rich in carbohydrates appears not infrequently to induce harmful consequences quite as serious as those that have been ascribed to fats. As Niemann points out,[1] the presence of an adequate reserve of fat is a characteristic of every healthy breast-fed infant. This fat deposit is surely not without import. It may act merely as an available store of energy to be drawn on in time of need; the fatty layer beneath the skin may serve an important purpose in the conservation of body heat and the maintenance of a normal temperature; or the fat may prevent the undue enrichment of the tissues in water. Whatever its function, however, it is evident that many of the current modes of artificial feeding fail to induce the typical accumulations of fat that one expects at this early age. The formation of a large fat reserve out of carbohydrates and proteins alone does not seem to follow with readiness in the infantile organism.

Wherein are the alleged dangers attributed in the past to the fat-content of the food to be sought? The fatty acids have been held responsible for them in great measure. The milk-fats of cattle yield more of the lower, volatile fatty acids than does human milk-fat. The detriment is conceived to lie in an acidosis in which these lower fatty acids are concerned; and we are reminded that various oils, notably cod-liver oil, which belong in a different category with respect to the point emphasized, are often excellently tolerated when milk-fat promptly occasions unfavorable symptoms exhibited in the form of high ammonia output, that is, acidosis.

Acting on the theory here propounded Niemann has proposed to eliminate the supposed objectionable features of cow's milk-fat by preparing a modified product from butter. The latter is thoroughly washed with water until all acid products are removed, and is then administered as an adjuvant to skimmed milk and cereal mixtures. The results of feeding this product thus fortified with "purified" butter-fat have been encouraging. It has been successful in cases of inability to utilize any considerable amount of fat as it naturally occurs in cow's milk; in cases in which various food mixtures poor in fat and rich in carbohydrate have failed to induce proper gains of weight; and in infants that were passing through the stage of recovery from losses incidental to malnutrition.

Only long-continued and extensive observations can finally determine the real efficiency of the feeding of refired butter-fat. It is of interest to note that the results obtained by Niemann in his preliminary investigation on children are quite in harmony with the unique findings of Osborne and Mendel in this country with respect to the factors influencing the growth of experimental *animals*.[2] These investigators have demonstrated that butter-fat furnishes some substance that exerts a marked influence on growth. They found, for example, that young rats fed on certain artificial mixtures of foodstuffs (the details of which need not be reviewed here) sooner or later ceased to grow and finally declined in body-weight. The fat in these food mixtures consisted of lard. When this was replaced in part by butter-fat, nutritive recovery and resump*tion of growth promptly ensued*. Of similar significance is the fact, reported by Osborne and Mendel, that although rats have grown normally for more than a year on a food mixture containing dried whole milk, a comparable diet containing centrifugated (that is, fat-free) milk in every instance proved inadequate during a similar period. Again, they have found that *another type of nutritive deficiency* exemplified in a form of infectious eye-disease prevalent in animals *that are inappropriately fed*[3] is speedily alleviated by the introduction of butter-fat into the experimental ration.

It must be borne in mind that butter-fat, like other fats and oils, is not a simple chemical compound, but a highly complex mixture including glycerids and various other substances in part as yet unknown. The chemical character of the unique *growth-promoting* feature of butter-fat needs to be investigated in detail. Osborne and Mendel have already found that this agent is not present uniformly in all fats. Egg-fat contains it,[4] whereas some other oils have proved no more efficient than lard. Such considerations make it evident that the comparative value of the natural fats employed in nutrition must be determined, as well as the individual rôle of the different proteins, carbohydrates and mineral nutrients. Perhaps Niemann has unknowingly put into practice in infant-feeding the lessons to be derived from the extensive researches of the American investigators who have been mentioned above.

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[1] Niemann, A.: Ueber die Möglichkeit einer Fettanreicherung der Säuglingsnährung, Jahrb. f. Kinderh., 1914, lxxix, 274; abstr. in The Journal A. M. A., April 18, 1914, p. 1291.

[2] Osborne, T. B., and Mendel, L. B.: The Relation of Growth to the Chemical Constituents of the Diet, Jour. Biol. Chem., 1913, xv, 311; The Influence of Butter-Fat on Growth, ibid., 1913, xvi, 423.

[3] Compare Knapp: Experimenteller Beitrag zur Ernährung von Raten mit kunstlicher Nahrung und zum Zusammenhang von Ernährungsstörungen mit Erkrankung der Conjunctiva, Ztschr. f. exper. Path. u. Therap., 1908, v, 147.

[4] This has also been pointed out by McCollum, E. V., and Davis, M.: The Necessity of Certain Lipins in the Diet during Growth, Jour. Biol. Chem., 1913, xv, 167.

THE RESISTANCE OF LIVING TISSUES TO DIGESTION

The question why the stomach does not digest itself is an ancient one. Enlarged to include the other portions of the alimentary tract this problem continues to elicit interest, to awaken discussion, and to provoke actual experimentation. A thoughtful student who has watched a shred of protein dissolve in a tube of gastric juice as demonstrated in every physiologic laboratory must have faced the same mystery. The literature of the subject is truly voluminous;[1] and every attempted explanation seems sooner or later to encounter insuperable objections. The problem, as connected with the possible etiology of ulcers of the digestive tube, has entered into the domain of pathology.

The most extreme view, which is still widely prevalent, assumes that under no circumstances can living tissues be dissolved by the natural digestive juices. In the light of recent experimental research, however, this can no longer be maintained.[2] It has now been demonstrated that the living mucosa of the urinary bladder, for example, of animals of any given species, cannot resist the proteolytic power of the natural, activated pancreatic juice of animals of the same species; and that it is even more readily attacked by the natural gastric juice. Even the living intestinal mucosa appears unable to remain intact under vigorous subjection to the gastric juice of the organism to which it belongs if food is not simultaneously administered to assist in some way in the protection of the tissue. The native protection which living tissues possess toward digestive agencies is thus limited at best. If the intestinal mucous membrane, almost continually exposed to the pancreatic juice, or the stomach mucosa, likewise bathed by an active gastric secretion, are not ordinarily disintegrated by these proteolytic agencies, we must assume that they possess the natural immunity to digestion during life in greater measure than do some of the other mucous membranes or epithelial structures of the organism.

We may as well admit that the mechanism of the undoubted specific protection of the gastric and intestinal mucosa still remains a mystery. The theory of the existence of antienzymes—antipepsin and antitrypsin—in suitable localities, has found wide acceptance, yet has not survived all the criticisms aimed at it.[2] The protective influence of the mucus secreted along the gastro-intestinal canal is an undoubted aid in the resistance of the wall to digestion, but it scarcely seems adequate to furnish the complete immunity that prevails year after year under most trying conditions of digestive danger.

Dr. Claudio Fermi of Sassari has kept numerous aquatic forms of life, such as protozoa, worms, crustacea, and insects, alive without harm in solutions of trypsin. During an entire month the tiny bit of almost naked protoplasm constituting an infusorian was unharmed by a solution of this enzyme which would speedily dissolve a large mass of coagulated protein. Shall we explain the immunity as due to antiferments, protective membranes, decreased permeability of the cells—or shall we uncover our ignorance and say, as did Hunter more than a century ago, that these living cells remain intact under such circumstances "because they are alive"?

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[1] Fermi, C.: Zentralbl. f. Bakteriol., 1910, lvi, 55; Arch. d. farm. sper., 1911, x, 449; Zentralbl. f. d. ges. Biol., 1912, xiii, No. 369. Oppenheimer, C.: Die Fermente, 1910, 270.

[2] Langenskiöld, F.: Ueber die Widerstandsfähigkeit einiger lebender Gewebe gegen die Einwirkung eiweissspaltender Enzyme, eine experimentelle Studie, Skandin. Arch. f. Physiol., 1914, xxxi, 1.

Current Comment

BACILLUS-CARRIERS AMONG ANIMALS

The wide-spread attention which has in recent years been given to the existence of "bacillus-carriers" is beginning to serve a useful purpose in elucidating the diseases of animals as well as those of man. The careful studies of Rettger and others on the bacillary "white diarrhea" of young chicks have shown conclusively that infected ovaries constitute the real source of infection in this disease, the responsible organism, *Bacillus pullorum*, being retained in the egg and thus transmitted to the developing chick.[1] Among the more plausible explanations of the way in which the ovarian infection can be produced, it has been assumed, in the light of what is known regarding the carrier conditions in typhoid fever, that chicks which recover from an attack of white diarrhea may continue to harbor the specific organism for a long time, or perhaps permanently, without revealing any untoward symptoms of the disease. Following this point of view, when maturity is reached the hitherto latent infection may be assumed to become actively centered in the ovary, especially in consideration of the intense physiologic activity occurring there during egg production. An obvious alternative explanation of the presence of the organism in the ovaries lies in the possibility of infection after maturity, through the droppings of diseased chicks or through the agency of transmission by lice or mites. An important link in the chain of evidence needed to complete the cycle of infection has at length been obtained by Rettger, Kirkpatrick and Jones.[2] They have demonstrated experimentally that female chicks which are infected with *B. pullorum* when small may develop into permanent bacillus-carriers and be a constant source of danger to young and old stock. This carrier condition may be established in fully 25 per cent. of an infected flock. We have in these investigations, which are likely to furnish methods for averting losses which run into thousands of dollars in the animal industry, an excellent illustration of the far-reaching effect which fruitful methods of research and suggestions derived from scientific medicine may exert in the problems of commerce, just as we have repeatedly pointed out how much medicine has gained in many cases from the discoveries which have, in the first instance, been made in non-medical fields and particularly in the sciences underlying agriculture. The biologic sciences are so closely interrelated that every one of them or its applications is likely to profit by the successful pursuit of another.

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[1] See Storrs Agricultural Experiment Station, Bulls. 60, 68 and 74. Also Gage: Jour. Med. Research, 1911, xxiv, 491; Ann. Rep. New York State Vet. Coll., Ithaca, N. Y., 1910, p. 111, and 1910-1911, p. 69.

[2] Rettger, L. F.; Kirkpatrick, W. F., and Jones, R. E.: Bacillary White Diarrhea of Young Chicks, Storrs Agricultural Experiment Station, Bull. 77, 1914, p. 263.

BLUE MILK

Although blue milk is referred to in American scientific literature it seems to belong among the rarities in this country; whereas serious outbreaks of it have occurred in Europe, and there its appearance seems to have been of considerable practical importance. Blue milk is ordinarily understood to be due to the production of a colored pigment in the fluid as the result of the development of special micro-organisms therein. This unusual manifestation in milk was early observed and reported; but Steinhof, who was able in 1838 to cause its disappearance by the use of disinfectants, was apparently the first to recognize the presence of an infectious material. The well-known bacteriologist Hueppe was the first to obtain a blue-milk organism in pure culture, in 1884, so that evidently the investigation of the subject goes back to the early days of bacteriology when this modern science was still in the formative period. There is a possible ground for misunderstanding as to the nature of the phenomenon. According to some,[1] milk may have an abnormal blue appearance due to other causes than the growth of micro-organisms therein. We are told that milk which had been allowed to stand in iron dishes for several hours had a peculiar bluish-gray color, indicating the presence of iron in solution. A number of investigators have maintained that the consumption of certain plants by milk-producing animals may result in an abnormal blue color in the milk secreted, but the data along this line are more or less conflicting. There seems to be no doubt, however, that the abnormal appearance of a blue color in milk is, in the great majority of cases, caused by the growth of micro-organisms in the milk. The appearance of a few isolated samples of blue milk which recently reached one of our Western experiment stations has afforded an opportunity for a new investigation of this uncommon phenomenon.[2] The organism isolated from the milk and proved to be responsible for this "outbreak" was the *Bacillus cyanogenes*, the same organism that has been isolated in other instances of blue milk. The fact that in the Iowa manifestations the trouble occurred in only two households out of eighteen served from the same dairy, and that these two were quite closely associated, indicates that the infection of the milk took place in the household. This explanation is also suggested by the failure of the blue milk to appear at the dairy farm, except in a pan brought from the home of one of the customers having the trouble. As far as is known, this organism is entirely harmless, and milk which is turned blue by it is objectionable only on account of its color.

NEW ORLEANS MEDICAL AND SURGICAL JOURNAL

Two things have happened recently in the medical journal field that merit a passing notice because of what they may indicate for the future. This comment deals with one of them. Three weeks ago an item appeared in our News Department to the effect that a new journal had appeared in New Orleans and that it was to be the official organ of the Louisiana State Medical Society. The item might have stated also that it was to be the official organ of the Pan-American Medical and Surgical Association — a new society just organized in New Orleans. This is incidental. We are at this time concerned with a different factor connected with this new venture in medical journalism. In his address, at the last annual meeting, the president of the Louisiana State Medical Society presented certain specific objections to the *New Orleans Medical and Surgical Journal* as the official organ of the society. The first objection was:

> "The carrying of unethical advertisements, condemned by the Council of the A. M. A., which should have terminated the contract long since, as it reflects discredit on every ethical member of the organization."

Among the recommendations was this:

> "The Society should undertake the publication of its own journal. . . . The advertisements to be strictly ethical and in conformity with the recommendations of the Council of the A. M. A."

While this recommendation that the state society publish its own journal was not adopted, another was adopted, reading:

> "That if this latter be deemed inexpedient that a contract be entered into with any ethical, live medical journal . . . provided . . . that its advertising columns contain no matter condemned by the Council of the A. M. A."

There were objections to a continuation with the *New Orleans Medical and Surgical Journal* other than the one mentioned; still this was an important one, and probably had as much influence as any other in swaying the vote. Thus the new *Pan-American Surgical and Medical Journal* becomes the recognized organ and receives the endorsement of the Louisiana State Medical Society. The *New Orleans Medical and Surgical Journal* that is thus superseded is the second oldest medical journal in the United States. For eighty years it has stood for the better things in scientific medicine and in the medical profession — in its reading pages. Until recently it was easily the leading medical journal of the South and had few equals in the North. If its good name and prestige are to be regained and retained it will be when it recognizes that in modern medicine, and among an enlightened medical profession, the fraudulent nostrum has no place, and cannot be tolerated in the advertising pages of scientific publications.

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[1] Olson: Rusty Cans and Their Effect on Milk for Cheese-Making, University of Wisconsin Exper. Station, Bull. 162.

[2] Hammer, B. W.: A Bacteriological Study of Blue Milk, Iowa Agricultural Experiment Station; Research Bull. 15, 1914, pp. 467-481.

THE BOSTON MEDICAL AND SURGICAL JOURNAL

The other incident referred to in the preceding comment occurred, not in the sunny South, but in conservative New England. The Massachusetts Medical Society has heretofore had neither a journal of its own, nor an official organ; it has issued its own publications in book or pamphlet form. For some time, however, the society, through its council and special committees, has considered the advisability of journalizing its transactions. These deliberations finally resulted in the adoption of a plan by which the *Boston Medical and Surgical Journal* becomes the official organ of the society. This is announced in the issue of the *Journal* for July 2, in which appears the annual address of the president, who discusses the question. He says:

> This project has been made possible by the generous and public-spirited attitude of the owners of the *Boston Medical and Surgical Journal*. . . . They agree that should this enterprise prove to be a source of income above the expense of maintenance, they will not derive any pecuniary benefit, but that all profit will be devoted to improving the quality and quantity of the journal.

Editorially we are told that "an advisory board of four from the Massachusetts Medical Society will later be appointed to act in conjunction with the three owners." Thus, though not actually owning the journal, the society will have a controlling voice in its management. Nothing has been published thus far regarding the question of advertising, but we understand that the new owners (who have only recently purchased the journal) have expressed themselves that the principles governing the advertising pages will be in accordance with those advocated by the great majority of our profession, and in consonance with scientific medicine. The *Boston Medical and Surgical Journal* is the oldest medical journal in the United States. Like its New Orleans namesake, it has a history to be proud of, and one of which the profession of New England is proud. From this new arrangement, and because of the new spirit that is to control the business side, we may be sure that the prestige of the past will be maintained; also, that no longer will its advertising pages be disgraced with nostrums that an enlightened profession can no longer tolerate. We heartily congratulate both the *Journal* and the Massachusetts Medical Society.

The State Society and Its Medical Journal.—The value of state society ownership of its medical journal is apparent in that the state has full control over the character of advertising and over the ethical question. Most of the state societies have a medical defense feature so that a state medical society becomes a business organization for the development of ethical and business problems which confront the profession. Men who have had a watchful eye on the evolution taking place in the practice of medicine, come to realize more and more the importance of studying economic problems relating to the profession. We take into account therefore protection against the tendency to malpractice suits due to the fact that the business world is now holding the doctor to a stricter accountability for his work. In addition to this is the development of industrial problems in which the doctor now finds himself to be an important factor, and perhaps the most helpless one on account of his inexperience in business matters and his willingness to become a secondary factor in our industrial evolution.—Editorial *Jour. Iowa State Med. Soc.*

Medical News

ALABAMA

Must Build New Prison.—Dr. William H. Oates, Montgomery, state prison inspector, after having exhausted all other means, has delivered to the board of revenues an ultimatum, that a new jail must be built for Jefferson County, failing which the prisoners will be removed to the state prison at Wetumpka. Dr. Oakes states that he has been vainly trying for the last two years to get Jefferson County to correct the situation which exists at the county jail.

University Items.—The annual address before the graduating class of the School of Medicine of the University of Alabama, Mobile, was delivered by Surgeon-General William C. Gorgas, U. S. Army.——Dr. J. Howard Agnew, formerly first assistant in the department of medicine of the University of Michigan, Ann Arbor, has accepted a full-time professorship at the University of Alabama.——Dr. William H. Clarke has been appointed a full-time professor in the department of anatomy.

CALIFORNIA

New Officers.—The Medical Symposium Society at Los Angeles, June 30: president, Dr. Edwin H. Wiley; secretary-treasurer, Dr. Michael S. Creamer. Dr. Van Noorden, Jr., of Vienna, delivered an address at this meeting.

One Day a Month at State Hospital.—Plans are being made by Superior Court Judges Grant Jackson and Willis I. Morrison to call a conference of southern California physicians to arrange for visits to the state hospital, Patton. The plan as formulated is to select a certain number of physicians, each of whom will devote one day each month to consultation with the hospital staff. At present there are five physicians and 2,100 patients in the hospital.

COLORADO

Health Department Endorsed.—The committee which the Pueblo County Medical Society appointed to make a thorough investigation of the health department of Pueblo, has reported as strongly endorsing the city commissioner and the City Health Department.

Personal.—Dr. Earl D. McGill, Wray, was shot and seriously wounded in an altercation, July 2.——Dr. Frank Smith, Longmont, who was operated on recently at the Longmont Hospital, is reported to be convalescent.——Dr. H. A. Hook, Loveland, was seriously injured in a runaway accident, June 30.

ILLINOIS

Personal.—Dr. E. Vincent Hale, Anna, announces his retirement from active practice.——Drs. William L. Gray, Champaign, and James S. Mason, Urbana, have sailed for Europe.——Dr. George H. Lee, Kankakee, is seriously ill with septicemia, due to an infected wound of the thumb.——Dr. Ralph B. McCleary, Monmouth, is reported to be seriously ill.

Health Center Established.—A health center for an entire township, including the towns of La Salle, Peru and Oglesby, has been established at La Salle with a high school and social center. This enterprise has been undertaken by a public-spirited citizen of La Salle. Physicians, school nurses and sanitary police will be provided, schoolchildren will be inspected, and the milk-supply of the three communities will be under control. The social settlement will include people's institutions with swimming-pools, libraries, reading-rooms, etc.

Chicago

Alienists and Neurologists Meet.—The national convention of alienists and neurologists was held under the auspices of the Chicago Medical Society this week. Institutional care, the teaching of sex hygiene and sterilization were put forward as the best means of remedying the increase of insanity in the United States.

Health Conditions in Chicago.—The *Bulletin* of the Chicago School of Sanitary Instruction for July exhorts the citizens to clean up and drive out the rats. This measure is prompted by the occurrence of five cases of bubonic plague in New Orleans. During June there were 67 cases of typhoid fever reported, of which number 14 were contracted outside of the city. Four were directly traced to contact with persons who had the disease. In 49 cases the sources of infection were not determined. The number of cases corresponds closely to that of 1913.

Fresh Air Stations for Sick Babies.—Fresh air stations for sick babies have been established by the Elizabeth McCormick Memorial Fund at the Northwestern University Settlement, Augusta and Robey streets, the Henry Booth House, 701 W. 14th Place, and at the House of Social Service, at 47th and Halsted streets. Dr. Frank W. Allin has charge of the medical staff of the tent system, and the nursing is under the charge of Mrs. M. Pearl Ringland of the Visiting Nurse Association. The tents are in close cooperation with the Health Department, Infant Welfare Society, Visiting Nurses, Tuberculosis Hospital and all forces working for the betterment of infant health in the city.

INDIANA

Hospital Dedicated.—The new St. Francis' Hospital, Indianapolis, was dedicated with appropriate ceremonies July 5, and was opened to receive patients July 10. The building is 197 by 48 feet, of fireproof construction, and will accommodate one hundred patients.

Personal.—Dr. Eugene B. Mumford, Indianapolis, has returned from six months' service as house surgeon in the Children's Hospital, Boston.——Dr. Robert Wagoner, Colburn, was stricken with cerebral hemorrhage, July 2.——The house of Dr. Richard B. Short, Bedford, was burned June 28.——Dr. Horace R. Allen, Indianapolis, who has been seriously ill with pneumonia, is reported to be out of danger.——Dr. James H. Taylor, Indianapolis, who has been seriously ill with pneumonia, is reported to be convalescent.

KANSAS

Health Officer for Every Schoolroom.—The State Board of Health proposes to follow the plans adopted in the Topeka schools, of having the children of each room elect a health officer weekly. The officers selected must look after the heating, ventilation and sanitation of the room. Beside the immediate good which will develop from this system, it is believed that it will interest the children in health problems, and as a consequence will arouse interest among their parents.

KENTUCKY

Personal.—The home of Dr. Amerida M. Gross, Hazard, was burned June 18, with a loss of $3,000. Dr. Taylor Hurst, an assistant of Dr. Gross, was severely burned in an endeavor to save children thought to be imperiled by the fire.——Dr. Benjamin W. Smock, Louisville, health officer of Jefferson County, has returned from Hot Springs after an absence of four months.

University Items.—On the recommendation of Dr. Henry Enos Tuley, dean of the medical department of the University of Louisville, President A. Y. Ford of the university has announced the following appointments: Dr. Leon L. Solomon, professor of medicine and clinical medicine; Dr. David C. Morton, professor of clinical medicine; Dr. Sidney J. Meyers, professor of medicine and medical economics; Dr. Frank W. Fleischhaker, professor of physical diagnosis; Dr. Gavin Fulton, adjunct professor of pediatrics; Dr. Siegel C. Frankel, adjunct professor of medicine; Dr. Irvin Lindenberger, adjunct professor of pediatrics; Dr. Charles Farmer, adjunct professor of abdominal surgery; Dr. Guy P. Grigsby, adjunct professor of gynecology; Dr. John W. Price, Jr., adjunct professor of surgery; Dr. Oscar W. Doyle, adjunct professor of therapeutics; and Dr. F. Stuart Graves, Boston, professor of pathology and bacteriology, vice Dr. Leon K. Baldauf, resigned.——Dr. James Bruce has been appointed resident physician of the City Hospital.——The medical library of the late Dr. J. B. Marvin, consisting of more than one thousand volumes, has been donated to the medical department of the university, and added to its library.——The hospital committee of the university has recommended the equipment of a modern pathologic laboratory, and the appointment of a resident pathologist.

LOUISIANA

Pan-American Society Meets.—The Pan-American Medical Society held a special meeting in New Orleans, July 17, to which the public was invited.

Cooperative Sanitarium Incorporated.—The Attakapas Cooperative Sanitarium has been incorporated at Lafayette, with a capital stock of $30,000 "to establish and maintain a sanatorium for the treatment of disease and the care of invalids."

New Officers.—Attakapas Medical Society at New Iberia, June 10: president, Dr. Isaac T. Rand, New Iberia; secretary, Dr. Lambert O. Clark, Lafayette.——Iberville Parish Medical Association at White Castle: president, Dr. Edward O. Trahan; secretary-treasurer, Dr. Guy A. Darcantel, both of White Castle.

Model Vital Statistics Bill.—The state legislature of Louisiana has passed the Model Vital Statistics Bill; also the so-called "Printers' Ink Bill" for the regulation of advertising. This bill which was endorsed by the House of Delegates of the American Medical Association at the Minneapolis session provides that any person or firm advertising any merchandise, securities or services to the public, who shall use any form of advertising which contains any untruth or misleading statement, shall be guilty of a misdemeanor. Louisiana is the eighteenth state to adopt such a law. It has also been adopted as a city ordinance by New York, Chicago and Los Angeles, and has been introduced into congress as a national measure.

MARYLAND

Health Department Moves.—The Baltimore Health Department has moved into its new quarters in the old Polytechnic Institute building on Cortland Street.

Asks for Rat-Catcher.—Health Commissioner Nathan R. Gorter, Baltimore, has applied to the Board of Estimates for permission to employ an official rat-catcher for the city, who will help the department in preventing any possible outbreak of the bubonic plague which has already manifested itself in New Orleans.

Personal.—Drs. Joseph C. Bloodgood and Alexander D. McConachie, Baltimore, have gone abroad.——Dr. George Y. Massenburg, who recently returned from Panama City, Panama, has offered to take charge of the "mosquito brigade" for Towson. While in Panama Dr. Massenburg had an opportunity to learn the methods used there to eliminate the mosquito and will use a similar treatment at Towson.——Dr. George H. Whipple has resigned as associate professor of pathology in Johns Hopkins Medical School, Baltimore, and has been appointed director of the Hooper Institute, San Francisco. Dr. Milton C. Winternitz has been appointed to succeed Dr. Whipple.——Dr. John C. Hemmeter, Baltimore, has been elected a foreign member of the Imperial German Academy of Sciences.

Twenty-Fifth Anniversary of Johns Hopkins Hospital.—Johns Hopkins Hospital is preparing to celebrate the twenty-fifth anniversary of its opening next October. Already plans for the event are well matured and a tentative program formulated. The celebration will begin on Monday afternoon, October 5, with a meeting at the Lyric, at which Dr. William H. Welch will preside and Sir William Osler of Oxford University will speak. Distinguished foreigners and Americans who received their medical training at Hopkins have been invited and the celebration will bring to Baltimore an imposing assemblage of noted scientists. Sir William Osler will conduct a clinic while here and Dr. Simon Flexner, of the Rockefeller Institute for Medical Research, will also return and speak. One of the most important features will be the dedication of the new Brady Urological Institute, presented by James Buchanan Brady, through Dr. Hugh H. Young, the completion of which will add another to the remarkable group of new buildings. This dedication will take place October 7. Dr. Thomas Lewis, of the University College, London, the editor of *Heart*, will deliver the lectures under the Herter Foundation at the Johns Hopkins Medical School in connection with the celebration. An interesting affair of the week will be the dedication on October 6 of the medallion in memory of Dr. John Hewetson, a former member of the staff, who died of tuberculosis while traveling abroad about four years ago.

MINNESOTA

Asks Appropriation for Sanatorium.—The Ramsey county commissioners have been asked by the board of control for an appropriation of $14,000 for expenses of the Cuenca Tuberculosis Sanatorium, a municipal institution, for the coming year.

Personal.—Drs. John H. Rishmiller and Olaf J. Veline, Minneapolis, have sailed for Europe.——Dr. Rollo C. Dugan, Winona, has been appointed superintendent of the hospital recently established at Ottawa, Kan.——Dr. Hibbard W. Hill, St. Paul, executive secretary of the Minnesota Public Health Association, assumed his duties July 1.

Memorial to Dr. Stewart.—A memorial to the late Dr. J. C. Stewart was adopted by the Board of Administration of the College of Medicine and Surgery of the University of Minnesota at its last regular meeting, July 2. The memorial sets forth the dominant characteristics of Dr. Stewart, his absolute frankness of opinion and positiveness of action, his varied services to his Alma Mater, the grateful remembrance and uniform respect in which he is held by his fellow alumni, and the loss his colleagues and the university have sustained.

MISSOURI

Personal.—Dr. Willard C. Proud, Oregon, has sailed for Europe.——Dr. James L. Downing, Eagleville, announces that he will leave this fall for Brazil, again to take up his work as a medical missionary.

Property for Hospital Site Transferred.—A warranty deed conveying the title of the site of the prospective Noyes Hospital at 24th and Jones streets, St. Joseph, was filed June 24. Plans are now being prepared for the hospital and work will begin on the building before fall.

New Officers.—Northern Missouri Medical Association at Moberly, June 18: president, Dr. William H. Miller, Macon; corresponding secretary, Dr. Adrian L. Cambre, Atlanta; recording secretary, Dr. Walter D. Pipkin, Excello. The next meeting will be held in Macon.

St. Louis

Personal.—Dr. Ralph E. Kinsella has been appointed chief resident surgeon, and Dr. Benjamin W. Klippel resident surgeon to the city hospital.——Dr. and Mrs. Walter Fischel have returned from Europe.

Railway Establishes Emergency Hospital.—The Missouri Pacific-Iron Mountain System has fitted up an emergency hospital in its general offices in the Railway Exchange Building, to be operated during the heated term. Drs. Oliver B. Zeinert and William D. Petit are in charge of the hospital.

NEW YORK

New Officers.—Auburn City Medical Society, June 30: president, Dr. Alfred F. Hodgman, Auburn; secretary, Dr. George C. Sincerbeaux, Locke.

Personal.—Dr. Alice Baxter, Ogdensburg, a member of the staff of the St. Lawrence State Hospital, has resigned to accept the position of woman physician to the Pontiac (Mich.) State Hospital. Dr. Baxter was presented with a gold wrist watch by the employees of that institution.——Dr. Charles W. Mills, Loomis, and Dr. John B. Allen, Central Islip, L. I., have sailed for Europe.

Quarantine Against Jersey Horses.—At a recent conference in Jersey City, participated in by the deputy commissioner of agriculture, the mayors of Jersey City and New York, health officers and veterinarians, it was announced that a quarantine against horses suffering from glanders had been established in New York state and city, and that all the horses passing between the two states would have to be inoculated with the mallein serum, which is supplied by the government. It is stated that 6,000 horses pass back and forth daily between the two cities. All such horses must be inoculated before September 1.

New York City

New Officers.—Brooklyn Pathological Society, May 14: president, Dr. William Lintz; secretary, Dr. Robert F. Barber.

License Revoked.—The Board of Regents revoked the medical license of Abraham Glickstein, New York City, on complaint of the New York County Medical Society.

New York Rats Plague-Free.—Commissioner of Health Dr. Sigimund S. Goldwater, in taking precautions to prevent the introduction of plague into this city, has had hundreds of rodents trapped under the piers and along the water front. The result of laboratory examinations show that the search for the plague bacillus has given only negative results. The work of examining rats will continue as long as there is any danger of the plague being brought to this port.

Personal.—Drs. John W. Draper and Henry W. Frauenthal have sailed for Europe.——Dr. Isadore H. Goldberger has been appointed assistant director of educational hygiene for the public schools of the city of New York.——Dr. James H. Morris has been appointed superintendent of the New York Polyclinic Hospital.——Dr. C. Irving Fisher resigned, July 1, after twenty-three years of continuous service as superintendent of the Presbyterian Hospital.——Dr. James W. Shaul, specialist in diseases of the eye, ear, nose and throat, has moved to Los Angeles, Cal.

Faith Cure for Gain Unlawful.—In the Willis Vernon Cole's suit which has been before the courts for over two years, the Appellate Division handed down a decision on July 10 that "Faith cure as work for gain is unlawful." The suit was brought by the New York County Medical Society on evidence obtained by a detective employed by the society. The case will be appealed as it is held that if this ruling stands Christian Scientists throughout the state will have to close their offices. Cole acknowledged that he had never studied medicine and that he received about $6,000 per year, most of which was given him voluntarily.

New Management at the Polyclinic.—The Polyclinic Hospital is about to inaugurate a new mode of management. The board of trustees and the faculty will remain the same, with their functions unaltered, but the board of managers will be active in directing the affairs of the hospital. John Gunn who has been superintendent of the hospital for twenty years has resigned and Dr. James High Norris who has been assistant manager at the Rockefeller Institute is to be superintendent of the hospital. The board of managers is to be presided over by Dr. John A. Wyeth who is also president of the faculty.

Fewer Fourth of July Casualties.—The records for the Fourth of July in the greater city show that twenty-six persons, nearly all boys under 16 years of age were accidentally shot by revolvers and twenty-six were more or less seriously injured by fire-crackers, toy pistols, etc. No one was fatally injured and the injuries for the most part were not severe. On the Fourth of July prior to the inauguration of the Sane Fourth there were 559 persons injured and seven killed in the greater city. Each Fourth since then has seen the number decrease until in 1913 there were 65 injured and no deaths, and the present year has witnessed a further reduction of accidents of this kind.

OHIO

Change in Management.—Dr. W. Clyde Leeper has sold his interest in the Rocky Glen Sanatorium for Tuberculosis to Mrs. Adah Schafer, Cincinnati. Dr. Leeper will remain with the institution as superintendent.

Warns against Unwise Economy.—Dr. Charles A. L. Reed, Cincinnati, has issued a strenuous warning against cutting down the present force of the Cincinnati Health Department while so great a danger as that of the bubonic plague is within so short a distance from the city as New Orleans.

Personal.—Drs. William C. Herman, Cincinnati, Wilson M. McClellan, Ashland, and William W. Pennell, Mt. Vernon, have sailed for Europe.——Dr. Frank Dahinden, health officer of Canton, has resigned to take effect not later than August 1.——Dr. Charles B. Parker, Cleveland, has retired from active practice on account of illness due to overwork. ——Dr. Luke V. Zartman has been appointed local surgeon for the Baltimore & Ohio system at Columbus, to succeed the late Dr. Sherman Leach.

Hospital Council Organized.—The organization of the Cleveland Hospital Council was perfected at a meeting held June 15. The council is composed of two representatives of each of the fifteen general hospitals of Cleveland, and its duty is to decide definite policies and lines of action as regards the economic and social services of its members. Arthur D. Baldwin, of the Babies' Dispensary and Hospital, was elected president; Dr. James E. Cogan, St. Alexis' Hospital, vice-president; Dr. Andrew R. Warner, Lakeside Hospital, secretary, and Dr. John Annisfield, Mt. Sinai Hospital, treasurer.

Trachoma in Children's Homes.—Dr. Thomas A. Copeland, a physician in Athens, whose practice is limited to diseases of the eye, ear, nose and throat, recently discovered twenty-four cases of trachoma among the eighty-one inmates in the Children's Home. These cases were all recent, and none of the usual complications had as yet occurred. An inspector of the State Board of Health confirmed the diagnosis and went before the trustees to instruct them as to the steps necessary to restrict the spread of the disease. Dr. Copeland was appointed to treat the cases, and a nurse was also appointed to oversee the general campaign in the home. Separate towels, wash basins, wash rags and other toilet utensils are being provided for the affected children and as much isolation as possible is being practiced.——Miss Greene, a representative of the Ohio Commission for the Blind, brought two cases of trachoma from the Pike County Children's Home at Waverly to the Children's Hospital at Columbus. One of the patients is suffering from entropion and the results of corneal ulcer. Dr. Schafer will operate on the patients at once. As a result of finding trachoma in these two county homes, the Division of Communicable Diseases of the State Board of Health proposes to make a survey of all county homes to determine the presence or absence of trachoma among the inmates.

PENNSYLVANIA

Pasteurization Rule to Be Strictly Enforced.—On July 1 Director Richard Harte announced that the Department of Health would rigidly enforce the new rules requiring that all milk sold in bottles in the city shall be pasteurized unless produced under approved sanitary conditions. On June 30 Judge Sulzberger refused to issue an order restraining the Board of Health from putting into effect the rule for the pasteurization of milk.

New Hospital Building.—On June 29 ground was broken for an addition to the American Oncologic Hospital, the only institution in the state which treats cancer in advanced stages. The new building, a two-story structure with basement, will cost $21,000. The first floor will be used as an operating room; the second floor to be known as the Banks Memorial Ward, will contain four rooms, for two female patients each, and the basement will be devoted to x-ray and radiographic work.

Physical Test for Child Workers.—After July 6, every child in this city under the age of 16 is required to pass a rigid medical examination before being granted a certificate to work. The examination will be conducted by physicians working under the auspices of the State Department of Labor. According to Henry J. Gideon, chief of the Bureau of Compulsory Education, authority for the regulation is provided by the Child Labor Act of 1909, which declares that only children who are "physically able" shall have labor certificates.

Personal.—Dr. Henry Osborne Beattie, Pittsburgh, and Malcolm Z. Gearhart, Reading, have sailed for Europe.——Dr. Henry B. Burns has been appointed head of the department of school hygiene of Pittsburgh.——Dr. Walter A. Yeakle, Norristown, has been appointed medical officer of the new cruiser recently built in Camden, N. J., for the Greek navy, and will accompany the cruiser on her maiden voyage.——Dr. Clyde R. McKinnis, resident physician of the male department of the Norristown Hospital for the Insane, has resigned to become medical director and superintendent of the Marchaise Hospital and Home, Pittsburgh.——Dr. Laverne D. Paige, Corry, was seriously hurt July 3, by the overturning of his automobile.——Drs. Edward Stieren and James D. Heard, Pittsburgh, have sailed for Europe.——Dr. Andrew Peter D'zumra, Braddock, has been appointed a fellow in internal medicine in the University of Pittsburgh.

Philadelphia

Personal. — The following physicians have sailed for Europe: Drs. Thomas E. Eldridge, William W. Sweet, William Zentmayer, Edward E. Montgomery, James M. Anders, William E. Hughes and T. Hewson Bradford.——Dr. J. Leo Donahue has been appointed assistant to the head of the insane department at Blockley.——Dr. William H. Walsh, for two years superintendent and medical officer of the Municipal Hospital, has been elected medical administrator of the new Children's Hospital. He will enter on his new duties October 1.——Dr. Philip H. Moore has been elected a member of the select council for the Forty-Fourth Ward.

WISCONSIN

Maternity Ward for Mount Sinai.—A maternity ward is being erected for Mount Sinai Hospital, Milwaukee. The building is five stories in height and will cost about $125,000, of which $100,000 has already been donated.

Sanatorium for Brown County.—A resolution was passed by the Brown County Board of Supervisors at its meeting, June 13, approving all contracts let by the sanatorium committee, and providing that the payment of $25,000, raised last year for the purpose of erecting a tuberculosis sanatorium be applied to this purpose as soon as the money is needed.

Personal.—Dr. Thomas W. Nuzum, Janesville, has sailed for Europe.——Dr. Carrie A. Frost, Chippewa Falls, has been appointed a trustee at the Lawrence College, Appleton.——Dr. Henry W. K. Abraham, Appleton, has been elected president, and Dr. John M. Beffel, Milwaukee, reelected secretary-treasurer of the State Board of Medical Examiners.——Dr. William C. Watkins, Oconto, has been appointed first lieutenant, M. C., N. G. Wis.——Dr. Walter W. Peck, Darlington, has been appointed local surgeon of the St. Paul System.——Dr. Alphons M. Kersten, De Pere, fell while making a professional call, July 4, dislocating his left ankle.

GENERAL

Meetings at Sioux Falls.—The Northwestern Oph-Lar-Rhin-Otic Society will hold its semi-annual meeting at Sioux Falls, S. Dak., July 23.——The annual meeting of the Sioux Valley Medical Society will be held at Sioux Falls, July 22-23.

Indian Service Physicians Confer.—A conference of the physicians of the U. S. Indian Service of the Northwest was held at the Fort Lapwai Indian Sanatorium, Fort Lapwai, Idaho, June 23-25, 1914. The conference was directly under the charge of Dr. Joseph A. Murphy, medical supervisor, U. S. Indian Service. The first days was devoted to tuberculosis, with Dr. John N. Alley, superintendent of the sanatorium as chairman; the second day to trachoma, with Dr. W. H. Harrison, ophthalmologist of the Indian Service as chairman, and the third day to oral hygiene and general infectious diseases, with Harry L. Hale, D.D.S., of the Indian Service, chairman. After a general discussion of all the medical problems of the Indian Service, the conference adjourned to meet in Denver, in 1915.

The Plague.—A telegram from New Orleans, July 14, states that the United States Public Health Service, with Assistant Surgeon-General William Colby Rucker in command, assumed control of the plague situation in New Orleans, July 8. The headquarters at 163 Dryades Street, are outfitted and opened. One hundred and sixty men, provided by the city for clean-up work, have been placed under the orders of the public health officials, and assigned to work in gangs of eight along the river front. Dr. Ruckers' staff is as follows: Surgeon Richard H. Creel, executive officer; Passed Assistant Surgeon Friench Simpson, in charge of field work; Assistant Surgeon Charles L. Williams, bacteriologist; Surgeon Gustave M. Corput, in charge of outgoing quarantine; Assistant Surgeon C. V. Akin, in charge of infected districts; Acting Assistant Surgeon Howard D. King, inspector of dead, and W. H. Keen, pharmacist. Surgeon-General Blue has ordered the United States Quarantine Steamship *Neptune* from Philadelphia to New Orleans, July 10. She is in command of Captain C. H. Bartlett and Passed Assistant Surgeon Norman Roberts, who will superintend the work of fumigation. This vessel is outfitted with the Harker carbonmonoxid apparatus for rapid deratization of ships. Since the last report, two cases of human plague have been reported, the fourth and fifth since the disease was discovered. Case number 4 is Leon Dejan, colored, male, 28 years of age, married, residing at 2227 Stann Street, employed in a wholesale produce house at 429 Poydras Street, who was taken ill July 5, and died in the Plague hospital, July 9. This case was one of right axillary bubo with secondary plague pneumonia. The fifth plague case was Elizabeth Domingo, a colored female, aged 35, married, living at 1902 Agricultural Avenue, corner of Allen Street, who had worked at 307 Lafayette Street, where sick and dead rats were seen July 10 and 12; sickened July 9, and was removed to the Isolation Hospital, July 12, with a left femoral bubo. In both cases the diagnosis was positively confirmed bacteriologically. Elizabeth Domingo received 120 c.c. of Yersin serum, and appears to be doing well. The second case of the series, Wilkinson, is convalescent. The total number of cases to date is five, with three deaths. Intensive rat trapping is being carried out in the area bounded on the north by Louisa Street, on the south by Napoleon Avenue, on the east by the water front, and on the west by Camp and Rampart streets. All trapped rats are being examined in the laboratory, but no positively plague-infected rodents have been reported. Precautions are also being taken to prevent the escape of rats to vessels, and the possibility of the spread of infection by river traffic. All vessels leaving New Orleans with certificates of the Public Health Service have been fended off 8 feet from the dock; 36-inch rat-guards applied effectively to hawsers; gangways continuously guarded, and the vessels fumigated with 4 per cent. sulphur-dioxid gas before loading. In other words, the federal quarantine regulations are being rigidly enforced. The campaign of education and publicity is going forward rapidly, and the newspapers are giving hearty cooperation. Meetings have already been held with the Civic Federation, Orleans Parish Medical Society, port commissioners, board of directors of cotton exchange, board of trade and in several negro churches. Four or five meetings will be held daily until the propaganda of education has reached the entire population. The Board of Health, on July 14, passed the rat-proofing, fending-off, chicken and garbage-can ordinances, prepared by the officers of the Public Health Service. The police department is cooperating in the enforcement of the garbage-can law. Inspection of all dead bodies prior to embalming has been instituted. This inspection is made from 6 a. m. to 9 p. m. by the inspectors of the dead, Acting Assistant Surgeon Howard D. King, U. S. P. H. S., and Dr. Sidney Dale Porter of the Louisiana State Board of Health. Reports of all cases and the progress of the work are forwarded promptly to the various consular officers in New Orleans. This action has had a beneficial effect in preventing quarantine by other countries. The New Orleans Civic Federation has appointed committees made up of representative women of the community on hotels, restaurants and markets to cooperate in the campaign.

CANADA

Cabinet Changes.—Of three members in the Ontario cabinet, the Hon. Dr. Robert A. Pyne, Minister of Education, and the Hon. Dr. Preston were reelected in the recent Ontario elections, while the Hon. Dr. Joseph O. Reaume, Windsor, Minister of Public Works, was defeated.

Provincial Association to Meet.—The annual meeting of the Saskatchewan Medical Association will be held in Saskatoon, August 18-20. Dr. George R. Peterson, Saskatoon, is president. Dr. Arthur Wilson, Regina, recently resigned as secretary and has been succeeded by Dr. J. T. McKay.

Infant-Welfare Work.—The Toronto Board of Health has appointed a medical director and thirty-one nurses in connection with infant-welfare work. Several baby clinics and milk depots have been established, and the Department of Health keeps in touch with birth registration. Literature is sent to and nurses visit the mothers.

Personal.—Dr. William P. Caven, Toronto, is in Europe. ——Dr. Albert E. Vipond, Montreal, has returned from conducting a series of experiments on pellagra at Columbia University.——Dr. Agatha Doherty, Toronto, has been appointed house surgeon at the new London Hospital for Women.——Dr. John W. McIntosh, Vancouver, B. C., has been appointed associate professor of chemistry and acting head of the department in the University of British Columbia.

Ontario Medical Council.—The Ontario Medical Council met in Toronto during the week ended July 11. The most important item of business transacted was the adoption of a resolution pledging the council to approach the Ontario legislature to secure legislation defining the phrase "the practice of medicine" in the province of Ontario. This will be presented to the government by the executive committee, legislation committee and representatives of the teaching body. Dr. James MacArthur, London, Ontario, was elected president, and Dr. John L. Bray, Toronto, was reelected registrar.

FOREIGN

Death of Duguet.—Dr. Nicolas Jean-Baptiste Duguet, vice-president of the Academy of Medicine of Paris, commander of the Legion of Honor, died in Paris, July 4, aged 77.

Chinese Physician Visits Hospitals.—Dr. Lew Chee, Peking, China, is making a tour of the United States, inspecting local hospitals to gain ideas to be used in the construction and management of a hospital to be built in Canton next year at a cost of $750,000.

LONDON LETTER

London, July 4, 1914.

Royal Commission on Venereal Diseases

At the forty-first meeting of the Royal Commission on Venereal Diseases, evidence was given by Mr. J. Smith Whitaker, medical member and deputy chairman of the National Health Insurance Commission. He explained the working of the panel system and said that an insured person suffering from venereal disease was entitled as part of his medical benefit to receive medical treatment exactly in the same way and to the same extent as other diseases. The position of the insured as regards the adequacy of the treatment when suffering from these diseases did not differ substantially from that of the ordinary population when under the care of general physicians, and in cases requiring treatment by specialists, the two sections of the population stood exactly on the same footing. With regard to sickness benefit—that is, periodical payments made to the insured person while rendered incapable of work by some specific disease—it was possible for an approved society to provide by its rules for the withholding of this benefit in cases in which the sickness was caused by the insured person's own misconduct, and this applied to many cases of persons suffering from venereal diseases. It was the usual practice, and had been for many years, for societies to class venereal diseases as a disease caused by misconduct. Mr. Whitaker thought that provision made for the treatment of particular diseases or particular groups of persons should be looked at not only from the point of view of those diseases of those persons but also from the broad point of view of the relation of that administration to the whole body of treatment of all kinds throughout the country. Any scheme of administration that might be devised, for example, for dealing with venereal diseases should be so framed that it would develop the abilities of physicians and make them more efficient for their general functions as the first line of defense of the country.

The Developments in the Medical Service of the Insurance Act

The British Medical Association is much concerned as to possible developments in the medical service under the insurance act, particularly the introduction of a whole-time medical service. This is advocated by socialistic politicians who use as one argument the excessive claims for sickness benefit which have been made in certain societies. For this physicians are blamed for being too complaisant in granting certificates. It is urged that if they were the servants of the state there would be no motive for gaining favor with patients in this way. It is also suggested that the different branches and specialties of medicine should be dealt with by whole-time specialists and that in this connection the state could take over the hospitals. If a whole-time medical service were established it is not conceivable that it would be limited to the insured alone; their dependents would certainly be included, and thus the whole population, excepting the wealthy, would be brought under the system. Such a development would certainly be unwelcome to the profession. It is not likely to occur in the near future, but one who studies political tendencies need not be a bold prophet to say that it is a perfectly certain goal. What the association is most concerned with now are certain minor developments which are all in this direction. The tendency is exemplified by (1) the appointment of whole-time tuberculosis officers—the first instalment of whole-time specialists; (2) tuberculosis dispensaries; (3) the appointment of whole-time referees to investigate cases of possible malingering, and (4) the appointment of specialists to consult with the panel physician when necessary.

The Clinical Congress of Surgeons of North America

Further preparations than those announced in my previous letter have been made for this congress, which will be run on lines new to this country and essentially American. Indeed, the American managers have expressed the view that while the American surgeons are coming here to see our hospital practice we shall be shown how a congress should be run and also taught how to put to better use the unrivaled hospital material of the metropolis of the world. According to the latest estimate about 1,200 American surgeons will attend. The membership will include not only British but also foreign surgeons. The registration fee is $5, which should be sent to the London office of the congress, Wimpole St. London, W. The Congress is divided into two parts comprising a preliminary clinical program and special demonstrations. The preliminary clinical program consists of visits to be made throughout the week to a group of London general and special hospitals, where on allotted days and hours members of the staff will be present to conduct surgical clinics. At the twelve great general hospitals to which a medical school is attached and eighteen special hospitals, members of the staff, who include most of the well-known London surgeons, will be present at the times indicated in an elaborate program. A member of the congress may make his selection of the clinics which he wants to attend. He should send a written request for reserved tickets to Mr. A. D. Ballou, general manager, 1 Wimpole Street, London, W., stating his wishes. The allotted tickets, which will provide numbered seats, will be retained at headquarters up to a certain fixed time (to be determined and announced later) in the name of the applicant, and will be assigned as nearly as possible in order of application. That the applicants may not be disappointed if the tickets for their first choice are exhausted, several selections should be made. Every person who desires to attend the clinics and evening sessions must register at headquarters and secure a membership card.

In the evenings addresses and discussions according to the program previously given in The Journal will take place at the two hotels which are the headquarters of the congress. The congress is thus a purely business one. Beyond the opening ceremony, at which addresses of welcome will be given by Sir Rickman J. Godlee, president of the Royal College of Surgeons, and the American Ambassador, Dr. Page, there will be no social functions of an official nature.

PARIS LETTER

Paris, June 26, 1914.

Latest Diminution in the French Birth-Rate

The birth-rate has continued to diminish during the last year: there are 745,539 living infants as contrasted with 750,651 in 1912. No lower total has ever been registered, with the exception of the year 1911, which was particularly deplorable. In recalling the steady fall in the French birth-rate, it will be enough to mention that the annual average of living births was 945,000 during the period from 1872 to 1875; that, since 1907 the annual number of births dropped below 800,000, and since 1911, below 750,000. This means that in less than forty years the French birth-rate has diminished by more than 200,000 a year. The proportion of living children to ten thousand inhabitants was 188 in 1913, instead of 190 in 1912, 187 in 1911, 196 in 1910, and 205 in 1906. The decrease, therefore, is accentuated each year. It is true that the birth-rate is falling in all the large countries of Europe, but the proportion is much less than in France; and, moreover, the excess of births over deaths is proportionately five or six times greater than in our country. Thus, for the year 1912, the excess of births over deaths for each ten thousand inhabitants was only 15 in France; in the same year it was 158 in Holland; 140 in Italy; 130 in Hungary; 127 in Germany; 107 in Austria, and 105 in England.

The last year showed an excess of 41,901 births over deaths, or only 10 for each ten thousand. The excess in 1912 was 57,911, or 15 per ten thousand. There is, therefore, a diminution of one-third from one year to the next. This diminution is due to a deficit of 5,112 births and an increase of 10,989 deaths. An excess of births is recorded in 49 provinces, while in 1912 it was recorded in 56. The departments in which the birth-rate exceeds the death-rate are those of the North, Pas-de-Calais, Brittany, the frontier regions of the Northeast, Limousin and Corsica. On the other hand, the valley of the Garonne, Normandy, the plateau region of Langres and Dauphiny continue to lose ground.

The number of deaths (703,638) is greater by 11,000 than that of 1912, which was lower than any recorded number since the opening of the nineteenth century. The proportion of deaths to the population is 178:10,000, as against 172 in 1912, 196 in 1911, and 179 in 1910. The mortality has increased in 64 departments, and particularly in Bouches-du-Rhône, Dordogne, Var, Haute-Savoie, Corsica, Somme, Haute-Vienne, l'Aveyron and Tarn-et-Garonne.

In 1913, 298,760 marriages were recorded, or 13,169 less than in the preceding year. The proportion of the newly married for each ten thousand has dropped from 158 in 1912 to 151 in 1913. The number of divorces has, on the other hand, increased by about 500; 15,076 were recorded in place of 14,579 in 1912. The increase has therefore continued; in 1900 there were but 7,157 divorces; in thirteen years the number has more than doubled. The proportion of divorces in the statistics of the population has gone from 366 per million in 1900 to 736 in 1912 and 761 in 1913.

Personal

May 17, in the halls of the hôpital Saint-Sauveur, at Lille, exercises were held in honor of Dr. Lemoine, professor of clinical medicine at that place, on the occasion of the twenty-fifth anniversary of his teaching. In the name of all his former pupils, Professor Déléarde presented Dr. Lemoine with a picture of himself, painted by the artist Pharaon de Winter.

BERLIN LETTER

Berlin, June 26, 1914.

Prize Offered by the Robert Koch Foundation for the Tuberculosis Campaign

According to a resolution of the executive committee, adopted April 16, a prize of $750 (3,000 marks) is offered for the best article on the subject "The Importance of the Various Forms of Radiation (Sunlight, Roentgen Ray, Radium and Mesothorium) for the Diagnosis and Treatment of Tuberculosis." The articles, which must be in the German language and typewritten, must be in the hands of the secretary of the foundation, Privy Councilor Professor Schwalbe, (Berlin-Charlottenburg. Schlüterstr. 53), not later than July 1, 1915. Each article must be marked by a motto. The name of the author is to be placed in a sealed envelope and the motto inscribed on the envelope. The jury of awards consists of the president of the imperial health office Dr. Bumm of Berlin, Privy Councilor Gaffky of Hanover, Ministerial Director Kirchner of Berlin and Privy Councilor Löffler of Berlin. After the awarding of the prize, the essay passes into the possession of the Robert Koch Foundation. The publication will be made according to the conditions which are attached to all the articles published by the funds of the foundation. The article itself will appear in the *Transactions* of the Robert Koch Foundation, while a short abstract prepared by the author will be printed in the *Deutsche medizinische Wochenschrift.*

Reduction in Mortality from Tuberculosis

According to an article published in the Medical-Statistical News (*Medizinal-statistischen Nachrichten*), the number of deaths from tuberculosis in Prussia was again reduced in the year 1913, and the reduction was to a much greater extent than in the previous year. From this disease there died 56,583 persons as opposed to 59,911 in 1912 and 61,219 in 1911; that is to say, in 1912 there was only a reduction of 740 persons, or 1.2 per cent., but in 1913 the reduction was 2,328, or 5.4 per cent. The number of persons who died of tuberculosis in Prussia, as in other civilized countries where the campaign against this disease is being energetically prosecuted, has shown for many years a considerable reduction. In 1876 the number of deaths from this disease was 79,770, so that in the thirty-seven years since that time, a reduction of about 23,000 deaths has occurred. The reduction in this period of time has not been uniform; however, indeed, in some years an increase is recorded; but in general, the success of the measures which have been taken against this disease is unmistakable.

Still more important is the reduction when a comparison is made between the deaths from tuberculosis and the total population. In 1876 the relative number per ten thousand living was 30.95. In 1903, the number had already fallen to 19.70; in 1912 it was 14.59, but in 1913 only 13.58. The fact that the number who died from tuberculosis compared with the entire population has fallen more than one-half in the last thirty-five years is very satisfactory and encouraging to a further struggle against this disease.

It is noteworthy, however, that the reduction is confined exclusively to tuberculosis of the lungs, while the deaths from tuberculosis of other organs shows a tendency to rise. In the year from 1903 to 1912 (the data for 1913 are not yet at hand), the number of those who died from tuberculosis of the lungs fell from 64,310 to 52,766, that is from 18.09 to 12.85 per ten thousand inhabitants, while those who died from tuberculosis of the other organs rose from 5,739 to 7,145, or from 1.61 to 1.74 per ten thousand. It is to be assumed however, that this increase is only apparent, as it may be referred to a more exact diagnosis in determining the causes of death.

In connection herewith, it may be of interest to learn the present status of the imperial tuberculosis campaign. The German central committee for the campaign against tuberculosis comprised 1,458 members, Jan. 1, 1914. The income was $8,647 (34,590 marks) from membership dues; $16,250 (65,000 marks) from the imperial government, and $31,250 (125,000 marks) from a lottery. For the year 1914 $12,500 (50,000 marks) more have been included in the imperial budget.

The number of institutions in Germany amounts at present to 158, with 15,877 beds for adult consumptives. With an average of three months' treatment for each person, 63,500 patients can be given treatment each year. Children with pronounced pulmonary tuberculosis may be received in thirty-two children's sanatoriums with 2,092 beds. Scrofulous children and those threatened with tuberculosis are received in 120 institutions with 9,145 beds. There are 23 sanatoriums for bone and joint tuberculosis with 1,776 beds, of which 75 are for adults. The number of forest convalescent stations is 125 (occasionally night-camps are instituted). The number of open-air schools is 18. Thirty-four convalescent homes receive only cases of closed tuberculosis and only in small numbers. For the selection of patients for the sanatoriums, there are 41 observation stations. The number of stations for information and aid has risen from 1,400 to 1,900. While the tuberculosis mortality in general has been further reduced in Prussia from 13.59 per ten thousand living, as compared with 31.09 in 1875, no reduction is noted among children.

FROM THE FRONT

(*From our Correspondent*)

Vera Cruz, Mexico, July 3, 1914.

Dysentery among Our Troops

The health of the Army and Marine Corps is excellent, there being at the end of the week only eighty-five patients in the Army hospital and seventy-five in that of the Marines, most of them suffering from trivial complaints. The sick-rate here is rather less than the average rate for troops in the United States. During the first month, May, one death occurred from bacillary dysentery, and this case is the only fatality from disease since the occupation of the city. Two men were lost by drowning, one from a fall and one from an accidental pistol-shot.

During May and June, sixteen cases of dysentery occurred in the Army and approximately thirty among the Marines; three of the Army cases and four among the Marines were amebic, the remainder being bacillary of a rather severe type. The onset is abrupt, and in a day or two the patient is profoundly prostrated, having twenty or more evacuations daily; the face and hands are drawn and pinched and suggest Asiatic cholera. The prostration becomes extreme and the patients deeply toxic. The stools consist of blood, mucus, epithelial cells, both singly and in large sloughs, and are without a trace of fecal matter or bile. The duration of the disease seems to be from two to four weeks. A few cases were treated with antidysenteric serum, but without other result than the production of annoying urticarial eruptions. The first few patients received opium in various forms at some stage of the disease and did not do so well as the later patients who were treated by Buchanan's method, with small doses of salts at frequent intervals, until such time as the stools lose their dysenteric character. Because of either milder infections or improved treatment the later cases have been, on the average, much less severe.

The complications are frequent and involve the nervous ystem and the synovial membranes. One patient developed an irregular, temporary hemiplegia, with loss of the power of speech; one a peripheral neuritis; one showed convulsions and active, maniacal delirium, and two developed multiple arthritis, closely resembling acute articular rheumatism.

Amebic dysentery is less prevalent, only two recent infections having occurred in the Army and the same number among the Marines, although there have been three relapses among men originally infected in the Philippines. Thanks to the emetin treatment this disease is now readily controlled, the patients returning to normal health much more quickly than the Shiga dysenteries.

During June there were not more than one quarter as many intestinal diseases as in May, furnishing direct evidence of the efficacy of the general sanitary measures instituted by the chief surgeon.

Troops serving at outposts, at some distance from the city, have been practically free from dysentery although using the common water-supply, and there is little doubt that the diseases have been acquired exclusively by flies and contact with the natives. Dysentery, both amebic and bacillary, is called by the native physicians colitis hemorrhagica, and is a common disease among the Mexican population and constitutes one of the principal causes of death.

The Antimalarial Campaign

Malaria comes second after dysentery in its importance to the troops. To date in the Army there have been twenty cases and about the same number among the Marines; the greatest number of infections are tertian, yet both quartan and estivo-autumnal types have occurred. Cases began to appear after the middle of the first month and at first tended to increase until the results of improved sanitation began to manifest themselves; as a result there has been practically no increase during the month of June. The antimosquito campaign of the city health department is primarily for the protection of the Army and is financed entirely by the War Department, yet the municipality benefits to the same extent as the troops. The plan involves inspections both in and on the outskirts of the city, and to understand the situation a few words as to the topography of this locality are necessary. The city is shaped like a crescent, lying with its concavity to the sea, and is about 3 miles long and 1 mile broad. The central part of the city is well paved with hard asphalt, and storm sewers convey surface water by the shortest route to the harbor; at a distance from the business section the pavements are cobble-stone and there is an entire absence of storm sewers, the rain running over the surface until it reaches the business section. No pavements whatever exist in the outskirts; buildings are few and far between and there are many vacant lots and waste stretches with large and small depressions containing enough water to breed mosquitoes. For many miles along the coast the country is sandy, and Vera Cruz has long been celebrated for its gigantic sand-dunes, which lie to the westward of the town almost shutting it off from the back country. The largest of the sand-dunes, now used as outposts and observation points, cover an acre or more in area and reach a height of approximately 100 feet. Smaller dunes flank these, diminishing in size as the sea is approached. At one time the entire area now occupied by the city must have been made up of hummocks and depressions in an irregular checker-board arrangement. The rainy season begins in May and continues through October, rain falling on more than half the days in considerable quantity, averaging for the past five years 50 inches per annum. Were it not for the fact that the ground slopes gently from the base of the sand-dunes toward the sea, the difficulties of carrying off promptly this volume of water would be considerable; from the extreme end of the drianage area to the gulf there is a fall of 11 feet, and by careful grading the Health Department has already constructed or repaired a system of ditches aggregating 25 miles in extent. Many depressions and pools lying below the general level have been either filled or oiled. To construct this really complete and intricate system of surface drains, the department has employed from 200 to 400 men daily under the charge of Major Noble of the Medical Corps, and has expended approximately $5,000 during each of the past two months. Another gang of men, also under Major Noble's direction, have made frequent inspections of houses, cisterns, cesspools, courtyards, fountains, etc., and have taken measures to prevent mosquito-breeding whenever necessary.

The results have been well worth the trouble and expense since mosquitoes of all kinds have been practically absent from the city up to the present time. On the extreme limit of the military outposts, however, comes territory still in the hands of the Mexican federal troops and of course, our sanitarians are barred; as a result the men on guard, and in time that means almost every one, are badly bitten and a certain number have contracted malaria. The antimalarial campaign includes, besides the measures against mosquitoes, the daily prophylactic use of 3 grains of quinin by each man, the screening of buildings and the use of bed-nets. At present there seems to be no danger of contracting malaria unless one approaches the Mexican army lines.

Public Health and Sanitation

Responsibility for public health and sanitation in Vera Cruz passed from Mexican to American physicians when the port was occupied by the Navy, April 21. When, April 30, the sailors were withdrawn, the duties devolved on the Army. In addition to his military duties General Funston was compelled to reorganize the municipal government, using Mexican officials as far as possible. Of the various departments only those dealing with sanitation need be considered. The chief surgeon of the expeditionary forces, directly responsible to General Funston, is Colonel H. P. Birmingham, Medical Corps, U. S. A., who has arranged all public health matters into three distinct departments dealing with military, civil and quarantine matters. The military division is directed by the chief surgeon in person; the civil department of public health is in charge of Major Theodore C. Lyster, Medical Corps, while the head of the quarantine service is Dr. von Ezdorf of the United States Public Health Service. Before the arrival of Colonel Birmingham, May 13, the quarantine department was in charge of Dr. von Ezdorf, and for a short time, of Dr. Guiteras, both of the Public Health Service.

Vaccinating an Entire City

Among the Mexicans the principal diseases are tuberculosis, dysentery and other intestinal diseases, measles and particularly, small-pox. During May there were twenty-two cases of small-pox with seven deaths, and during June, twelve cases with four deaths, the last case being reported June 21. No cases whatever have occurred among the American troops. The Health Department began general vaccination May 18, with virus obtained from the United States, and up to June 30 had vaccinated 41,404 persons. Fifty per cent. of all vaccinations have been successful, and among children, the primary vaccination has succeeded in between 80 and 90 per cent.

Since the total population is less than 60,000, the vaccination of the entire city will soon be completed and small-pox will be a thing of the past. Already two weeks have passed since the development of the last case.

Marriages

Edward Joseph Gungle, M.D., Casa Grande, Ariz., to Miss Eleanore F. Hartmann of Philadelphia, at Casa Grande, June 25.

Alexander Livingstone Maclennan, M.D., Raymond, Wash., to Miss Exie Moore of Vancouver, Wash., June 30.

G. Earl Low, M.D., Klein, Mont., to Miss Ethel Mae Templeton of Spray, Ore., at Helena, Mont., June 29.

George Thomas Hegner, M.D., Appleton, Wis., to Miss Florence T. O'Brien of Fond du Lac, Wis., June 25.

Edward Francis Timmins, M.D., Boston, to Miss Mary Frances O'Meara of Roxbury, Boston, June 30.

Albert Ernest Perron, M.D., to Miss Helene Abigail Dubuque, both of Fall River, Mass., June 23.

Edward Rosseter Mugrage, M.D., Denver, to Miss Leah M. Troutman of Ft. Collins, Colo., June 24.

Guy Stanhope St. Amant, M.D., Gonzales, La., to Miss Hilda Laville of Riverview, La., June 30.

Walter Henry Parker, M.D., Boston, to Miss Etta H. Holmes of Wollaston, Mass., June 30.

Arthur Dolphie Knabb, M.D., to Miss Beulah Harlow, both of Springfield, Mo., June 26.

Edward Joseph Cotter, M.D., Boston, to Miss Mary C. Mack of Salem, Mass., June 30.

William Redfield Butt, M.D., to Miss Charlotte Fletcher, both of Philadelphia, June 30.

Gilford B. Gallemore, M.D., to Miss Lilla Maude Leslie, at Houston, Tex., June 30.

Harvey Shoemaker, M.D., to Mrs. Anne Comyns, both of Philadelphia, June 25.

Deaths

Joseph William Gleitsman, M.D. University of Wurzburg, Germany, 1865; a Fellow of the American Medical Association and New York Academy of Medicine; surgeon in the German army during the Schleswig-Holstein Campaign and the Franco-Prussian War; formerly president of the American Laryngological Society; emeritus professor of laryngology and rhinology in the New York Polyclinic Hospital, and laryngologist and otologist to the German Hospital and German Dispensary; died at his home in New York City, July 2, aged 73.

William Govans Ridout, M.D. College of Physicians and Surgeons in the City of New York, 1866; for several years a member of the board of governors and visitors of St. John's College, Annapolis, Md.; also a graduate in law; a veteran of the Civil War, in which he served in the United States Navy; once health officer of Annapolis; died at his home in that city, June 29, from the effects of a fall downstairs, in which he fractured his hip, aged 78.

Michael Joseph Brown, M.D. Jefferson Medical College, 1893; and five years later instructor in anatomy in his Alma Mater; LL.B. and LL.M. of Notre Dame University in 1897; professor of classics and science in Columbia University, Ore., in 1898; and professor of English and Law in Havana during 1909 and 1910; died at his home in Kensington, Philadelphia, June 27, from heart disease, aged 70.

Franklin Garcelon, M.D. Medical School of Maine, Brunswick, 1870; formerly a member of the American Medical Association; district surgeon to the San Pedro, Los Angeles, and Salt Lake Railroad, with headquarters at Pomona, Cal.; dean of the profession of Pomona Valley; died in the Pomona Valley Hospital, June 24, after a long illness, aged 66.

Hugh Wythe Davis, M.D. Medical College of Virginia, Richmond, 1861; a member of the Medical Society of Virginia; one of the most prominent practitioners of Richmond; assistant Surgeon General in the Confederate service during the Civil War; a trustee of Richmond College; died at his home in Richmond, Va., June 29, aged 73.

William T. Rinehart, M.D. Jefferson Medical College, 1886; a Fellow of the American Medical Association; and a pioneer practitioner of Ashland, Wis. where he established the Rinehart Hospital; once Health Commissioner of Ashland; died in Augustana Hospital, Chicago, July 1, aged 58.

Thomas Dade Palmer, M.D. Jefferson Medical College, 1871; a Fellow of the American Medical Association; surgeon to the Florence and Cripple Creek Railroad, and to the Colorado State Penitentiary, Canon City; formerly physician of Fremont County; died at his home in Canon City, Colo., June 5, aged 64.

Bailey P. Howard, M.D. University of Nashville, Tenn., 1861; Evansville, Ind., Medical College, 1877; one of the oldest practitioners of Owensboro, Ky.; surgeon of the Thirteenth Kentucky Cavalry, C. S. A. during the Civil War; died at his home in Owensboro, June 26, aged 78.

Harold Haines Steere, M.D. Hering Medical College, Chicago, 1903; College of Physicians and Surgeons, 1908; a member of the Illinois State Medical Society; was shot by a patient in his office in Chicago, July 13, and died a few hours later at St. Anthony's Hospital, aged 40.

Stella Blanche Nichols-Jones Nelson, M.D. Northwestern University Women's Medical College, Chicago, 1882; a Fellow of the American Medical Association; and formerly a medical missionary in China; died at her home in Oshkosh, Wis., June 25, from heart disease, aged 55.

William Holmes Yeakley, M.D. University College of Medicine, Richmond, Va., 1899; of Keyser, W. Va.; a member of the West Virginia State Medical Association; was drowned in Cow Pasture River, near Staunton, Va., June 25, after saving a woman from drowning.

James George Hunt, M.D. Eclectic Medical Institute, Cincinnati, 1849; and for a time professor in his Alma Mater, and for many a years a practitioner of Cincinnati; died at the home of his daughter in Westwood, Cincinnati, June 8, from senile debility, aged 90.

D. E. McEachern, M.D. Medical College of the State of South Carolina, Charleston, 1894, of Statesboro; a member of the Medical Association of Georgia; died suddenly, June 26, from heart disease, while making a professional call near Denmark, Ga., aged 40.

Ebenezer C. Thomas, M.D. Medical College of Ohio, Cincinnati, 1860; surgeon of the Third West Virginia Volunteer Infantry during the Civil War; died at his home in Moundsville, W. Va., June 29, from cerebral hemorrhage, aged 77.

John W. Johnson, M.D. College of Physicians and Surgeons, Baltimore, 1883; for several years township physician and director of public safety of Nelsonville, Ohio; died at his home in Nelsonville, July 1, from heart disease, aged 63.

Alonzo V. Thorpe, M.D. American Medical College, Eclectic, St. Louis, 1884; Beaumont Medical College, St. Louis, 1890; a Fellow of the American Medical Association of Jamestown, Mo.; died in California, Mo., May 18, aged 61.

Thomas William Embley, M.D. Hahnemann Medical College, Philadelphia, 1896; of New York City; one of the visiting staff of the Metropolitan Hospital; died suddenly in Plainfield, N. J., June 28, from heart disease, aged 40.

Henry Parkhurst Greeley, M.D. Chicago College of Medicine and Surgery, 1913; of Lee, Ill.; was instantly killed in a collision between the automobile in which he was riding, and a railroad train near Shabbona, Ill., July 5.

Howard King Edgerton, M.D. University of Nashville, Tenn., 1889; a member of the Tennessee State Medical Association; President of the Lebanon, Tenn., Woolen Mills; died at his home in Lebanon, July 1, aged 48.

Gordon Chittock, M.D. Rush Medical College, 1851; said to have been the oldest practitioner in Jackson, Mich.; died at his home, June 23, aged 87.

August H. Schwacke, M.D. Medical College of the State of South Carolina, Charleston, 1886; died at his home in Charleston, June 18, aged 50.

Harry George Wiest, M.D. Hahnemann Medical College, Philadelphia, 1876; died at his home in Schuylkill Haven, Pa., June 19, aged 64.

Benjamin Oliver Webb, M.D. Rush Medical College, 1878; of Los Angeles; died in that city, June 18, from general paresis, aged 60.

James H. Reilley, M.D. Albany, N. Y., Medical College, 1886; died at his home in Memphis, Tenn., June 17, aged 53.

Evelyn Briggs, M.D. Johns Hopkins University, Baltimore, 1900; died at his home in Sacramento, Cal., about May 4.

Taylor S. Mitchell, M.D. Jefferson Medical College, 1875; died at his home in Hockessin, Del., May 29, aged 61.

Frank C. Davie, M.D. Long Island College Hospital, 1876; died at his home in Angelica, N. Y., May 26.

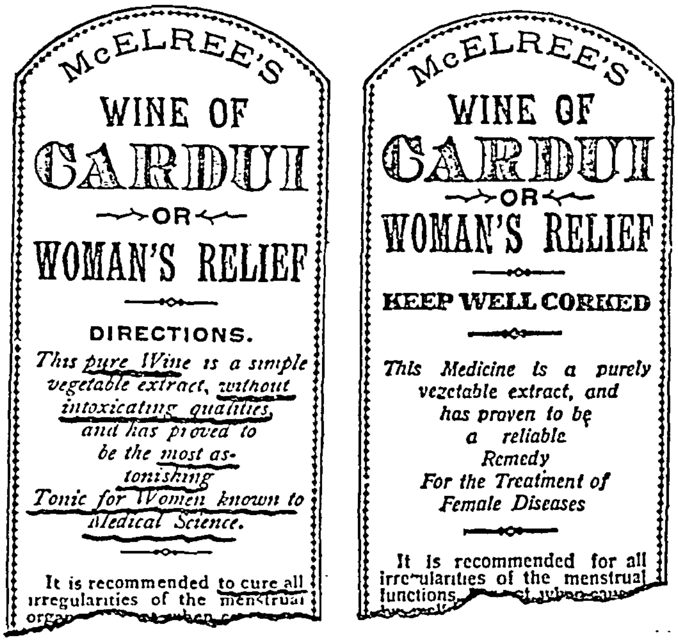
The Propaganda for Reform

In This Department Appear Reports of the Council on Pharmacy and Chemistry and of the Association Laboratory, Together with Other Matter Tending to Aid Intelligent Prescribing and to Oppose Medical Fraud on the Public and on the Profession

WINE OF CARDUI

The Journal's Position Made Clear and "An Explanation" Explained

On April 11, The Journal published an article on "Wine of Cardui," a fraudulent "patent medicine" made and sold by the Chattanooga Medicine Company. Attention was called to the fact that the chief owner of this company is John A. Patten, one of the most prominent officials in the Methodist Episcopal Church. It was shown that Mr. Patten occupied what is probably the most influential position that can be held by any layman in the church, that of chairman of the "Book Committee." The book committee is, according to the Methodist Year Book "almost a general conference *ad interim*." It has the power of fixing the salaries of the bishops, church publication editors and publishing agents, and of removing from office the editor of any of the official publications. It also has general supervision of the publishing financial interests of the church.



McELREE'S
WINE OF
CARDUI
—OR—
WOMAN'S RELIEF

DIRECTIONS.
This pure Wine is a simple vegetable extract, without intoxicating qualities, and has proved to be the most astonishing Tonic for Women known to Medical Science.

It is recommended to cure all irregularities of the menstrual

McELREE'S
WINE OF
CARDUI
—OR—
WOMAN'S RELIEF

KEEP WELL CORKED

This Medicine is a purely vegetable extract, and has proven to be a reliable Remedy For the Treatment of Female Diseases

It is recommended for all irregularities of the menstrual functions

The labels on Wine of Cardui before the Pure Food Law went into effect declared that the stuff was a "pure Wine;" was "the most astonishing Tonic for Women known to Medical Science" and furthermore, that it was "without intoxicating qualities!" Compare the newer label (on right) with the old (on left). The company continued to publish falsehoods in advertisements which were not subject to the penalties of the Pure Food Law.

The chairmanship of this powerful committee is not the only gift of the church to Mr. Patten. He is one of the board of managers of the "Board of Education"; also, he is a member of the "Freedman's Aid Society," of the "Commission on Federation," of the "Executive Committee of the Laymen's Associations" and of the "Methodist Men's Convention"; in addition he represents General Conference District No. 6 in the "Methodist Brotherhood."

Mr. Patten's defense of the nostrum business when he spoke as the representative of the "patent medicine" men's organization (the Proprietary Association of America) was referred to in our former article. Mention was made, also, of the news item published in *Collier's* in 1912 regarding an alleged attempt on the part of the advertising counsel of the Chattanooga Medicine Company to influence public health legislation by telling newspaper men that "all advertising of proprietary medicines in New Mexico" would stop if a certain bill, that the "patent medicine" men opposed, became a law.

The older and newer claims for Wine of Cardui were compared and it was shown that while direct lies had been removed from the labels and cartons of Wine of Cardui—which would render the manufacturer liable under the Food and Drugs Act—the most outrageous falsehoods were still printed in booklets sent out to women who answered the company's advertisements. These booklets are not subject to the penalties of the "pure food law."

WINE OF CARDUI ANALYZED

The Association's chemists made a careful analysis of Wine of Cardui which we again give in order that our readers may know what was found. It should be added that since the appearance of the first article additional analyses have been made both in the Association's laboratory and elsewhere, and the findings of the chemists coincide essentially with the original findings, which read as follows:

CHEMIST'S REPORT

"The name Wine of Cardui would indicate that the preparation was made from blessed carduus (*Cnicus benedictus*) a plant variously known as blessed, cursed, spotted or bitter thistle. Wine of Cardui is a dark brownish liquid having a neutral reaction, a peculiar, valerian-like odor and a bitter, mawkish taste. The odor was not wine-like in any particular. The preparation is claimed to be purely vegetable and the presence of 20 per cent. of alcohol is declared. Arsenic, bromids, iodids, the potent alkaloids such as aconitin, morphin and strychnin, or the emodin-bearing drugs such as aloes, cascara and senna, were not found. Potassium bitartrate (cream of tartar) was absent, thus indicating the absence of wine from grapes. Alcohol was determined and 20.36 per cent. of absolute alcohol by volume was found. The volatile matter amounted to about 97 per cent. The nonvolatile residue appeared to consist of vegetable extractives. This had a bitter taste and gave very faint reactions for alkaloids. The quantity of alkaloid was too small to possess any appreciable medicinal effect, whatever its potency might be. Small quantities of a nitrate were present. Potassium nitrate is a constituent of a considerable number of plants, among which is blessed thistle. The presence of traces of this salt in Wine of Cardui does not, therefore, prove the presence of blessed thistle extractives in this preparation, although it is confirmatory evidence. A trace of combined ammonia also was present.

"It is probable that Wine of Cardui is a weak, hydroalcoholic extract of blessed thistle, containing a trace of valerian. Blessed thistle has been employed to some extent in domestic medicine as a simple bitter, but little attention is given to it by discriminating writers in materia medica. It seems probable that whatever medicinal effect Wine of Cardui may possess, is due principally to its alcohol content."

THE EFFECTS OF THE FIRST ARTICLE

Such then, in brief, was The Journal's original article on Wine of Cardui. In it two things were emphasized: One, the more important, the fact that Wine of Cardui is a vicious fraud; the other, that the preparation contains 20 per cent. alcohol, and, so far as the Association's chemists could discover, no other drugs in amount sufficient to give any medicinal effect.

The article brought many letters of commendation. The only protest came from the representatives of the Chattanooga Medicine Company. Two editors of official church publications called at The Journal offices and discussed the article. Both of them admitted that advertisements of Wine of Cardui were debarred from their magazines; but curiously enough both seemed much more concerned with that part of the article referring to the alcohol content of the nostrum than they did with the much graver charge of fraud. In fact, it seems that The Journal's statement to the effect that Wine of Cardui contains twice as much alcohol as is found in champagne has elicited more comment than the charge that the stuff is an outrageous fraud on the women of the country.

PATTEN OFFERS TO RESIGN

We have learned that after the article appeared, Mr. Patten offered to resign from the various positions he holds in the church. To quote from a statement sent out by Mr. Patten himself:

"His [Mr. Patten's] first thought was to tender his resignation and this he prepared, but five representative members of the [Book] Committee, who heard of his purpose, insisted that he should not resign, stating that they had always known what his business was, and they would not consent to his withdrawal in the face of such plainly malicious charges."

THE LIQUOR DEALERS' ATTORNEY TO THE RESCUE

Although The Journal learned from other sources that action was to be brought against it for the article, no notification was received by it or its attorneys of any suit. The Journal did, however, receive a visit from Mr. Warwick M. Hough, who came as a representative of Mr. Patten and the Chattanooga Medicine Company. Mr. Hough is an attorney who is exceedingly well known in certain circles. Mr. Samuel Hopkins Adams, in *Collier's*, May 11, 1912, in calling attention to Mr. Hough's activities in behalf of the "Swamp Root" fraud—another alcohol-containing nostrum—characterized the attorney as: "Warwick M. Hough, the legal prop and bulwark of the 'patent medicine' fakers and the food adulterators."

For years Mr. Hough was general counsel for the National Wholesale Liquor Dealers' Association of America, and served, it is said, the Eastern Blenders' Association and the Distillers' Association. In the spring of 1906 he appeared as attorney for the "blended whiskey" interests before the committee that was hearing arguments preparatory to drawing up what finally became the Federal Food and Drugs Act—the "Pure Food Law."

To quote from the official record:

> "The Chairman.—We will hear you briefly. What is your name, if you please?
>
> "Mr. Hough.—Warwick M. Hough, of the firm of Klein & Hough, attorneys at law, of St. Louis, Mo.
>
> "The Chairman.—Whom do you represent?
>
> "Mr. Hough.—I appear for the National Wholesale Liquor Dealers' Association of America, an organization which comprises the majority of the distillers, wholesale distillers, and rectifiers of the United States; and represents, it has been asserted, almost 90 per cent. of the volume of business, a business from which the Government gets one-fourth of its entire annual income . . ."
>
> "The Chairman.—Are you their regular attorney, employed annually?
>
> "Mr. Hough.—I have been for years . . ."

In addition to his employment by various liquor organizations, Warwick M. Hough has appeared in behalf of various nostrums—largely those of the alcoholic type. His activities in behalf of "Swamp Root" have already been referred to. He also appeared before the Board of Food and Drug Inspection at Washington in behalf of "Sure Thing Tonic," a fraudulent nostrum—"alcoholic strength 50 proof." In spite of Mr. Hough's pleadings, however, "Sure Thing Tonic" was declared misbranded under the Food and Drugs Act, and its manufacturers fined. Mr. Hough also appeared before the same board in behalf of "Holland Gin," sold by the Baird-Daniels Co.

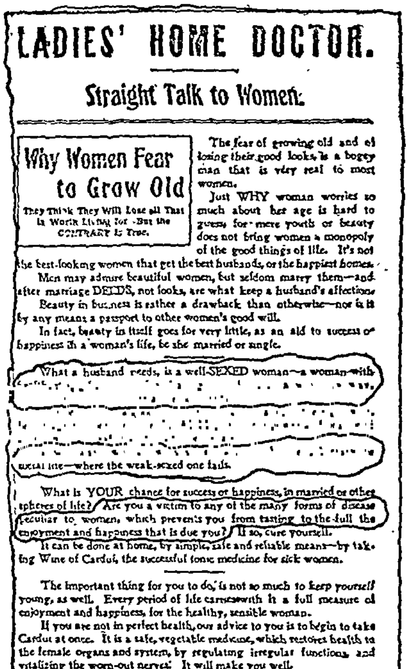
Right here let it be said that nothing The Journal may say regarding Mr. Hough should be interpreted as personal criticism. We found Mr. Hough a suave, pleasant gentleman. That he, as an attorney who has been closely identified with the liquor interests, should have accepted a commission given him by Mr. Patten and the Chattanooga Medicine Company, is not surprising; that Mr. Patten should have felt called on to employ the ex-general counsel of the liquor dealers' association may or may not be a matter for *wonderment!*

"AN EXPLANATION" EXPLAINED

Mr. Hough submitted that his clients protested against The Journal's inference that Wine of Cardui might be, and probably was, used as a "tipple." According to Mr. Hough the Chattanooga Medicine Company declared—although no proof was submitted—that Wine of Cardui could not be used in larger or more frequent doses than those recommended on the label, because the taste of the preparation and the alleged presence in it of an emetic principle would prevent it. These statements of the company, while not accepted as final by The Journal, were published in a brief note entitled "An Explanation" that appeared in the issue of June 6. The Journal there stated that if these allegations were true, then the term "tipple" as commonly understood, could not be applied to the preparation.

Why, it may be asked, did The Journal publish "An Explanation" if the company's statements regarding Wine of Cardui were not accepted as final? There were two reasons. The first lay in the interpretation given by Mr. Patten and his company to our use of the terms "booze" and "tipple." It was never The Journal's intention to convey the impression that Wine of Cardui is or was generally bought as whiskey is bought, that is, knowingly for its alcoholic effect; yet, according to Mr. Patten—through his spokesman the ex-general counsel for the National Wholesale Liquor Dealers' Association of America—The Journal's article was interpreted as having declared that the nostrum was so misused.

That there may be no misunderstanding as to The Journal's attitude on this question, let it be stated: We believe that the essential physiologic effect produced by Wine of Cardui is that due to the alcohol it contains. We believe further, that it is a justifiable assumption that women, unused to alcohol, taking this nostrum may, unconsciously, be led to the use of it in increasingly large doses or with increasing frequency. And this is what was meant when the inference was made that Wine of Cardui might be used as a "tipple."[1] If the alleged medicinal ingredients—other than alcohol—of Wine of Cardui were put up in tablet form Mr. Patten would never have amassed his present fortune!



LADIES' HOME DOCTOR.

Straight Talk to Women.

Why Women Fear to Grow Old

They Think They Will Lose all That is Worth Living for—But the CONTRARY is True.

The fear of growing old and of losing their good looks, is a bogey man that is very real to most women.

Just WHY woman worries so much about her age is hard to guess, for mere youth or beauty does not bring women a monopoly of the good things of life. It's not the best-looking women that get the best husbands, or the happiest homes.

Men may admire beautiful women, but seldom marry them—and after marriage DEEDS, not looks, are what keep a husband's affections.

Beauty in business is rather a drawback than otherwise—nor is it by any means a passport to other women's good will.

In fact, beauty in itself goes for very little, as an aid to success or happiness in a woman's life, be she married or single.

What a husband needs, is a well-SEXED woman—a woman with [illegible] social life—where the weak-sexed one fails.

What is YOUR chance for success or happiness, in married or other spheres of life? Are you a victim to any of the many forms of disease peculiar to women, which prevents you from tasting to the full the enjoyment and happiness that is due you? If so, cure yourself.

It can be done at home, by simple, safe and reliable means—by taking Wine of Cardui, the successful tonic medicine for sick women.

The important thing for you to do, is not so much to *keep yourself young*, as well. Every period of life carries with it a full measure of enjoyment and happiness, for the healthy, sensible woman.

If you are not in perfect health, our advice to you is to begin to take Cardui at once. It is a safe, vegetable medicine, which restores health to the female organs and system, by regulating irregular functions, and vitalizing the worn-out nerves. It will make you well.

Cardui relieves periodical pain, pulls up falling womb, and builds up health-tonicity. Over a thousand women a month testify to its curative powers. Are they all mistaken?

Try Cardui today. All druggists sell it in $1.00 bottles, with full directions for use.

For special directions for your case, write us a letter, in strictest confidence, stating age and frankly describing all your troubles. We will send valuable advice, in plain, sealed envelope, free. Address: Ladies' Advisory Dept., The Chattanooga Medicine Co., Chattanooga, Tenn.

One of the advertisements of Wine of Cardui which were characterized by what Samuel Hopkins Adams described as "loathsome and gratuitous indecency."

The second reason for the publication of "An explanation," was that the matter might be put up squarely to the membership of the Methodist Episcopal Church, which has not only highly honored Mr. Patten but has also accepted from Mr. Patten, money derived from the sale of a vicious and fraudulent "patent medicine." Its readers know that The Journal is not in the habit of avoiding libel suits when such suits come as a result of its policy of exposing frauds in medicine. In the present instance, however, there were good reasons for believing that should Mr. Patten be given the slightest apparent justification for bringing an action against The Journal, prominent officials of the Methodist Episcopal Church would have taken refuge behind this suit as an excuse for not taking any definite action on Mr. Patten's status in the church. Soon after The Journal's first article appeared, a correspondent wrote us in this connection as follows:

> "I am informed that the owner of this Wine of Cardui has brought suit against The Journal or the editor, I am not sure which, and that, pending the settlement of the suit no action is to be taken on his willingness to withdraw from the several important positions in the Methodist Episcopal Church."

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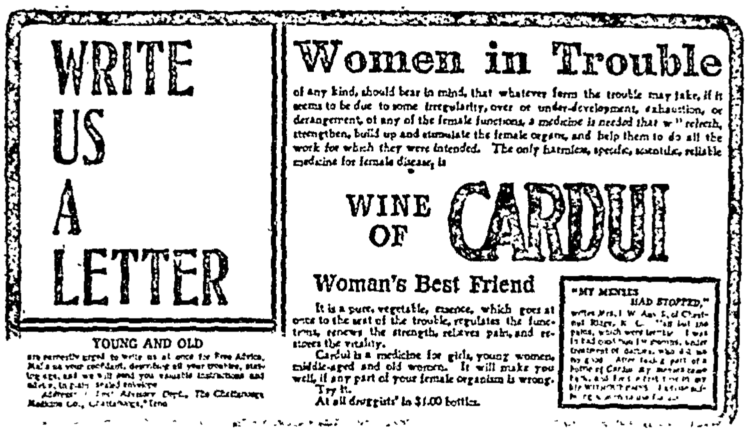
[1] "Tipple: To drink or sip, as alcoholic beverages, frequently or habitually, but not to the point of inebriation."—Standard Dictionary.

Nor was this all. When the Methodist ministers met in Chicago a few weeks ago, the papers stated that one of their number offered a resolution demanding that John A. Patten resign from his position as chairman of the book committee. The newspaper continued:

> "Action on the resolution was prevented by the Rev. Dr. John Thompson, district superintendent of the Chicago Western district. He said that Mr. Patten has instituted a suit against the publication for $250,000 damages and asked that no action be taken until the suit has been decided."

The Journal's experience with actions for libel brought by proprietary manufacturers forces it to question whether such suits are ever brought in good faith. When a certain fraud was exposed by The Journal a few years ago, suit was entered against the American Medical Association for the article. For three or four years the matter dragged in the courts, never coming to trial, and was finally thrown out. In the same way another suit, started five years ago, is still hanging in the courts and has never been brought to trial. Doubtless the same tactics would have been pursued had the Chattanooga Medicine Company been given an opportunity to bring suit against The Journal for the article on Wine of Cardui. The bringing of the suit would have been heralded widely, and the public would have been led to believe that Mr. Patten was a much maligned man. From every standpoint, therefore, it seemed inadvisable to give the slightest justification for opportunity of befogging what is a very definite issue. So much for the explanation of "An Explanation."


WRITE US A LETTER

YOUNG AND OLD

Women in Trouble

of any kind, should bear in mind, that whatever form the trouble may take, if it seems to be due to some irregularity, over or under-development, exhaustion, or derangement, of any of the female functions, a medicine is needed that will refresh, strengthen, build up and stimulate the female organs, and help them to do all the work for which they were intended. The only harmless, specific, scientific, reliable medicine for female disease, is

WINE OF CARDUI

Woman's Best Friend

It is a pure, vegetable, essence, which goes at once to the seat of the trouble, regulates the functions, renews the strength, relieves pain, and restores the vitality.

Cardui is a medicine for girls, young women, middle-aged and old women. It will make you well, if any part of your female organism is wrong.

Try it.

At all druggists' in $1.00 bottles.

"MY MENSES HAD STOPPED,"

A specimen of the Wine of Cardui advertisement appearing in November, *1905.*

HAS WINE OF CARDUI AN EMETIC PRINCIPLE

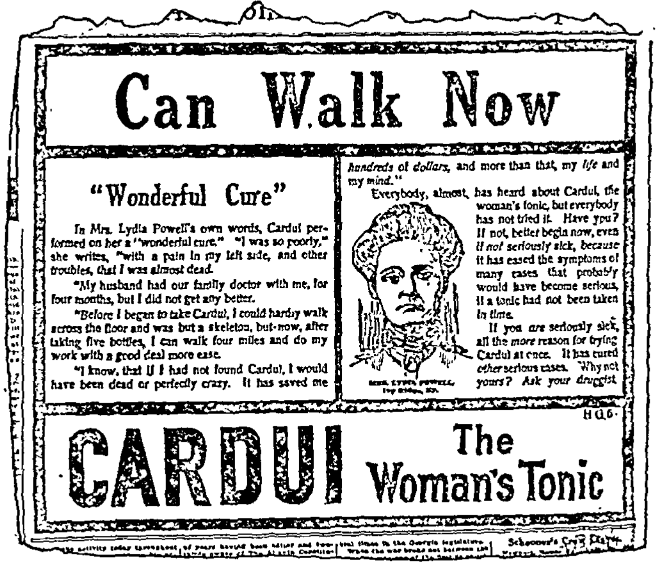
Now, to revert to the points put forward in the protest of Mr. Patten's company regarding the possible misuse of Wine of Cardui. The stuff contains 20 per cent. alcohol; this is admitted. So far as we have been able to discover by repeated careful analyses, Wine of Cardui contains no other drug having any therapeutic effect present in sufficient quantities to prevent the use of this stuff for its alcoholic effect. Since The Journal's original article appeared, tests have been made to determine this point.

SOME EXPERIMENTS

The dose of Wine of Cardui, according to the label, is one tablespoonful—half an ounce—to be taken three or four times a day. Each tablespoonful contains forty-eight drops of pure alcohol or the equivalent of about one hundred drops of whiskey. THE GIRL OR WOMAN WHO TAKES FOUR TABLESPOONFULS OF THIS NOSTRUM DAILY GETS THE SAME AMOUNT OF ALCOHOL THAT SHE WOULD OBTAIN IF SHE TOOK FOUR HUNDRED DROPS OF WHISKEY, OR, TO PUT IT ANOTHER WAY, THE SAME AMOUNT OF ALCOHOL THAT SHE WOULD GET FROM ONE-QUARTER OF A PINT OF CHAMPAGNE, OR ABOUT TWO-THIRDS OF A BOTTLE OF BEER. And this, bear in mind, is the dose recommended. It was stated that larger doses cannot be taken for two reasons: First, because the taste is alleged to be such as to prevent it, and second, because in larger doses it is alleged to act as an emetic. Here, then, are two definite assertions that are capable of proof or disproof.

So far as the taste of Wine of Cardui is concerned, while mawkish and bitter, there is nothing about it to prevent the use of the stuff either in larger or more frequent doses than that called for on the label. It is undoubtedly a fact that many persons who had never tasted ale or lager beer would declare these beverages just as unpleasant to the taste as "Wine of Cardui." It is probably true, too, that it is impossible to make preparations containing alcohol so unpleasant to the taste that they will not be misused by those who discover—innocently enough, perhaps—the exhilarating effects of the alcohol in such preparations. We may, therefore, dismiss at once the claim on the part of the manufacturers that the taste of Wine of Cardui will prevent its use in larger or more frequent doses than those recommended on the labels.

The question of an emetic principle presents a different problem. If there is such a principle in Wine of Cardui, then it should be possible to produce vomiting or at least nausea, by taking the preparation in doses larger than that called for. To test this point two and one-half ounces (five tablespoonfuls) of Wine of Cardui were taken and the alcohol removed by evaporation, leaving everything in the resulting product except the alcohol. This amount of material containing five times the regular dose of Wine of Cardui, was taken by each of three individuals to test its physiologic effect. No effect whatever was experienced! The experimenters might as well have taken so much water. To further test the point, three other persons each took five times the normal dose—that is, two and one-half ounces—of Wine of Cardui, alcohol and all. This is equivalent in alcohol-content, to about one ounce of whiskey and the persons who took these massive doses of the nostrum experienced no other effect than that to be expected from such an amount of whiskey. No vomiting or even nausea was experienced. So much for some of the experimental work that has been done to determine the question whether or not Wine of Cardui contains an emetic principle.


Can Walk Now

"Wonderful Cure"

In Mrs. Lydia Powell's own words, Cardui performed on her a "wonderful cure." "I was so poorly," she writes, "with a pain in my left side, and other troubles, that I was almost dead.

"My husband had our family doctor with me, for four months, but I did not get any better.

"Before I began to take Cardui, I could hardly walk across the floor and was but a skeleton, but now, after taking five bottles, I can walk four miles and do my work with a good deal more ease.

"I know, that if I had not found Cardui, I would have been dead or perfectly crazy. It has saved me *hundreds of dollars,* and more than that, my *life* and my *mind.*"

Everybody, almost, has heard about Cardui, the woman's tonic, but everybody has not tried it. Have you? If not, better begin now, even *if not seriously sick,* because it has eased the symptoms of many cases that probably would have become serious, if a tonic had not been taken in time.

If you *are* seriously sick, all the *more* reason for trying Cardui at once. It has cured *other* serious cases. Why not yours? *Ask your druggist.*

H Q 6

CARDUI The Woman's Tonic

Another Wine of Cardui advertisement. This appeared in April, *1910,* some years after the "present managers" of Wine of Cardui *took control.* The wonderful cure of Mrs. Lydia Powell, described *in this* advertisement, prompted us to get some facts *on* the case. We learn from a physician, *living in the same* town as Mrs. Powell, that she died in *1910!*

EVIDENCE FROM THE FIELD

If Wine of Cardui can be used as a *stimulant—in* other words a "tipple"—then, in all human probability, it is so used. Shortly after the publication of The Journal's *brief* note entitled "An Explanation," the following letter was received from a Tennessee physician.

> *"To the Editor:*—On page 1827 of The Journal for June 6, under the heading, 'An Explanation,' you refer in rather an apologetic manner to something that appeared April 11, concerning a nostrum much used in this country—'Wine of Cardui.'

"I did not read the issue of April 11, so I don't know how strong you made it, but it could not have been stronger than deserved. Sold in dollar bottles of sixteen doses, forty-eight minims of alcohol to the dose—enough to make any puny, nervous woman feel as good as a Scotch highball would the average man. Would go out of use at once if the medical properties it may contain were put up in a tablet or some other menstruum than dilute alcohol. Used sometimes by men a whole bottle at a time in this prohibition country, when short on more palatable 'booze.'

"For many years I have asked most all women I have treated for female diseases, if they had been benefited by using Wine of Cardui. About all had tried it more or less liberally. The answers were the same in substance: 'No, I can't say that it did. I thought I felt better when I first did, but as soon as I quit it, I could tell no difference.' Her husband and sons could say the same about their quart of sixteen-year-old Bourbon. Some women would say they could not take full doses, as it made their heads feel strange.

"No, Mr. Editor, you cannot hit too hard."

FURTHER TESTIMONY

This information made it seem worth while to write to physicians in Tennessee and the surrounding states asking for such light as they might be able to throw on the question. Here are excerpts from a few of the replies received:

From Sevier County, Tenn.—"I have known of cases in which Wine of Cardui was used in excess of the regular dose. I have seen men drink a half-bottle without taking bottle from mouth."

From Henderson County, Tenn.—"I saw a man who was drunk on it; he had drunk two and one-half bottles I was reliably informed."

From Scott County, Tenn.—"I have known a few women who seemed as though they could not get along without Cardui, and a few men to take it as a beverage."

From Walker County, Ga.—"I have known of two cases where Wine of Cardui was used in excessive doses and without complaint being made of nausea or other symptoms suggesting the presence of an emetic."

From Dickson County, Tenn.—"We have a great many supply stores through here and they all sell great quantities of the stuff [Wine of Cardui]. Two very large stores here, and one of the merchants told me four days ago that he sold as high as six bottles to one party at a time, so I judge from what he said they must be using it for its alcoholic effect."

From Smith County, Tenn.—"Some women here have been using it for a long time and think they could not live without it, who would think it awful to use common intoxicants."

From Chester County, Tenn.—"It is handed around by recommendation from one woman to another. I believe it is almost a public curse the way it is used."

From Colbert County, Ala.—"The druggist tells me there are fifty women, more or less, who buy regularly Wine of Cardui in excessive quantities. . . ."

From De Kalb County, Tenn.—"I once knew two men who bought Wine of Cardui and drank it as a beverage. At another time, some laboring men purchased several bottles at a country store, got drunk on it, one of them struck another on the head with a bottle, inflicting a severe scalp wound, necessitating my taking ten or twelve stitches to close the wound."

These represent merely some of the reports that come in from the districts in which Wine of Cardui has an extensive sale. They speak for themselves. As it has been said before, however, the alcohol-content of Wine of Cardui is but a minor indictment against the product; the basic objection to it is that the business has been built on deceit; that its sale is a wicked and vicious fraud perpetrated on ailing women.

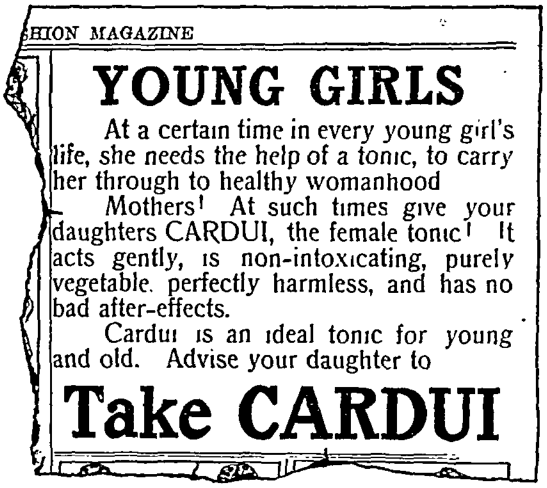
Before leaving the question of the composition of this nostrum, it is worth while to quote some paragraphs from a preliminary report on Wine of Cardui submitted by Dr. Henry Leffmann of the Department of Chemistry, Women's Medical College of Pennsylvania:

"The preparation is in my opinion not a 'wine' either in the general or technical sense; it would be more correctly described as a 'tincture.' If the plant or plants from which this preparation purports to be named—to judge from its title—contain any principles of value along the line for which it is recommended, it would seem to be far better that they should be put on sale in the form of a concentrated extract which could be diluted with water as required. It seems wrong to sell a bottle containing one-fifth of its volume of alcohol for the sake of furnishing a few per cent. of bitter principles freely soluble in water alone. I recognize that it is stated that the alcohol is added to prevent spoiling but the necessary preservation could be reached in other ways.

"Considering all these points I am of the opinion that Wine of Cardui is a dangerous preparation as now manufactured and sold. Its inaccurate title may mislead persons into the belief that it is a preparation of real wine; its high percentage of alcohol may easily establish the alcohol habit without the consciousness of user until the condition has developed. Its nauseous taste and odor are not sufficient to prevent the development of a liking for it. The ease with which the tobacco and opium habits are established, although both are very nauseous drugs, show that under pressure of strong impulse a 'Wine of Cardui' habit may be established."

ARE THE CLAIMS EXTRAVAGANT?

Mr. Patten's concern also took exception to The Journal's criticisms of the advertised claims made for Wine of Cardui. The concern asserted—through Mr. Hough—that it is "their desire and intention" to avoid claims for Wine of Cardui "that might reasonably or generally be objected to as extravagant." Either this "desire and intention" has been born since the publication of The Journal's first article on Wine of Cardui, or, Mr. Patten has a curious conception of what constitutes extravagance of statement. The criticisms in The Journal's first article on Wine of Cardui were directed against the recent advertising. The older advertisements were merely referred to as a matter of historical interest. In every instance The Journal made plain whether old or recent advertising was being referred to.



HION MAGAZINE

YOUNG GIRLS

At a certain time in every young girl's life, she needs the help of a tonic, to carry her through to healthy womanhood

Mothers! At such times give your daughters CARDUI, the female tonic! It acts gently, is non-intoxicating, purely vegetable. perfectly harmless, and has no bad after-effects.

Cardui is an ideal tonic for young and old. Advise your daughter to

Take CARDUI

Here is another advertisement published in 1910 in which Wine of Cardui is recommended for young girls and is declared to be "non-intoxicating" and "perfectly harmless." Both of these falsehoods were eliminated from the labels and cartons of Wine of Cardui when the Food and Drugs Act went into effect. Had they been retained the Chattanooga Medicine Company would have subjected itself to prosecution. In newspaper advertisements and circulars "patent medicine" venders can lie to their heart's content without fear of legal reprisal.

SOME RECENT CLAIMS

It is in the company's *recent* advertising that women are urged to take Cardui for "hanging breasts"; to take this alcoholic nostrum for gonorrheal infection of the vulva; to take Wine of Cardui for anteflexion, retroflexion, prolapse and inversion of the uterus; to take Wine of Cardui for suppressed menstruation and for "flooding"; to take Wine of Cardui for inflammation of the uterus, for inflammation of the ovaries and for inflammation of the fallopian tubes! It is the *recent* advertising that contains the villainous suggestion that "every girl should take Cardui at the time of puberty." Is it the *recent* advertising that tells the bride that "all newly married women should take Cardui." It is the *recent* advertising that plays on the fears of the expectant mother, and assures her that Wine of Cardui "will assist in making childbirth easier." It is the *recent* advertising that tells the lying-in woman that "Cardui should be taken two or three times a day." It is the *recent* advertising that tells the woman at the menopause "Cardui should be taken regularly on the first sign of the coming change and its use continued through the entire period." It is the *recent* advertising that tells the same woman that at this time "cancer is also greatly feared by many women" and plays on and capitalizes her fears thus:

> "There is no doubt that the womb, at this time, is less able to withstand disease, and if a patient is attacked, she is not unlikely to succumb to a local disease like cancer. But cancer is really a very rare disease, and other diseases, under proper treatment with Cardui, as a general tonic, will eventually disappear, so that, after the change has occurred, you will probably feel better than ever before."

All of these claims are in the *recent* advertising! And by the *recent* is meant that which was being sent out at the time of the appearance of The Journal's article a few weeks ago. Yet the Chattanooga Medicine Company piously pleads that its present desire "is to avoid . . . claims that might reasonably or generally be objected to as extravagant."

It is not necessary at this time to discuss the other preparations put out by the Chattanooga Medicine Company such as Thedford's Black-Draught," a so-called "vegetable liver powder"; the vaginal douche preparation, "Cardoseptic"—formerly called "Cardui Wash"—nor the line of fountain syringes that the company sells as an accessory to its "injection" medicine.

SUMMARY

To summarize:

1. Wine of Cardui is a vicious fraud.
2. Each dose contains as much alcohol as is found in about 100 drops of whisky and, so far as careful chemical and physiologic experiments show, does not possess any other drugs in sufficient quantities to give any appreciable therapeutic effect.
3. The principal owner of the business is John A. Patten, who is probably the most influential layman in the Methodist Episcopal Church.
4. While the Methodist Episcopal Church accepts Mr. Patten's money, the official publications of the church will not, so far as we have learned, accept the advertisements of Wine of Cardui.
5. The claims made on the package were so false that, when the Food and Drugs Act went into effect, it became necessary to modify them.
6. The claims made in recent advertising sent out by the Chattanooga Medicine Company, but not subject to the supervision of the Food and Drugs Act, were still false, fraudulent and vicious.
7. Mr. Patten, and his company, resented the inference that Wine of Cardui might be used as a "tipple," and submitted their protest through an attorney whose activities in behalf of the liquor interests, have been notorious.

In closing, The Journal wishes to emphasize the fact that nothing that has been said about John A. Patten is actuated by malice. The Journal believes that the business in which Mr. Patten is engaged is a public menace; it believes that the exploitation of Wine of Cardui is vicious and fraudulent; it believes, further, that as a matter of duty, the public should be apprised of these facts. Guilt in such instances is personal. As an editorial writer in *Collier's* recently said, referring in this instance not to a "patent medicine" maker, but to a whisky manufacturer:

"The law may better conditions in some respects, but whether it is bad 'booze' or poisonous patent medicines that are dispensed, the only way really to accomplish anything is to bring shame into partnership with the man who makes money out of it."

Correspondence

Surgical Charges

To the Editor:—There is no fixed rule governing the charge for surgical operations; but it is an accepted principle that it should depend on three factors, namely:

1. The social and financial standing of the patient.
2. The gravity of the operation, and sometimes its result.
3. The experience and skill of the surgeon.

There is a general rule, however, often adopted by the best operators of broad ethical ideas, that the maximum charge for a major operation should be about one month's gross income of the patient; that is, if the person for whom the service is performed has a salary of $12,000 a year, or an income from business, after paying actual expenses of the business, of a similar amount, the fee should be about $1,000. This does not take into consideration the patient's living-expenses. There are, however, many considerations that may reduce the charge and a very few that might reasonably allow of making it more. Good and fair-dealing surgeons, considering the three factors already mentioned, always endeavor "to do as they would be done by," and never to be oppressive in their charges.

It is better that an understanding be arrived at about the charge beforehand, the patient having given the surgeon a frank statement of his financial condition; but the foregoing principles should govern.

There are unfortunately some persons (black sheep) in the profession whose policy is to get all they can in every case, a "beg, borrow or steal" policy that is not countenanced by any right-minded physician. I. F. E.

[Comment.—The foregoing communication is from a surgeon who, in an accompanying letter, says: "This was written because so many reports come to my knowledge of exorbitant charges, usually by persons who have no claim to special skill, and because these things are bad for both patient and surgeon, as well as for the profession as a whole." The determination of equitable fees for surgical services is an important and complicated question. It has been asserted that modern surgery has injected into medical and surgical practice a spirit of commercialism not in harmony with the traditions of the profession. Not only the charging of exorbitant fees, but also the performing of unnecessary operations has been alleged. Undoubtedly, isolated instances of both practices occur, but are such incidents common and if so, what is the remedy?—Ed.]

PLANTAR WARTS

To the Editor:—About fifteen years ago I suffered for several months with this painful affliction. At the suggestion of a colleague, I applied directly to the warts a 5 per cent. aqueous solution of chromic acid, application being made every second day with a toothpick or match-end. A very few applications effected a permanent cure, the warts being destroyed, leaving deep pits which soon closed in. There has been no recurrence. In the only case which I have observed since then cure was promptly obtained by the same treatment. I do not know who originated this treatment, and cannot even recall who suggested it to me; it was some one on the staff of the Vanderbilt Clinic at that time. The results were most satisfactory. Probably a stronger solution could be used if necessary.

W. P. Millspaugh, M.D., Los Angeles.

[Comment.—Chromic acid has long been used as an application to warts, the strength being greater than in this communication. A solution containing 100 grains to the ounce is recommended. The British Pharmacopeia has a solution of 25 per cent. strength. It is applied in a 5 per cent. solution to prevent perspiration of the feet and to harden the skin. It seems, therefore, that the solution recommended by Dr. Millspaugh is much too weak for application to warts.—Ed.]

Pneumothorax Artificialis, an International Society

To the Editor:—In The Journal, July 4, 1914, p. 49, I noticed that Dr. H. Schwatt of Edgewater, Colo., proposes the formation of a pneumothorax association. The doctor and others may be interested to know that there exists already an international society of medical men interested in this therapeutic procedure; it is called "Pneumothorax Artificialis." The secretary and treasurer of the society is Prof. C. Saugman, Vejlefjord Sanatorium, Daugaard, Denmark. The annual dues are $1. To each member is sent semiannually a list of all members with their addresses. The publication known as *Revista delle Publicazione sul Pneumothorace Terapeutica,* which is edited by Professor Forlanini, is sent gratuitously to every member. In it are reviewed all publications on artificial pneumothorax. The reviewer of the American publications is Dr. M. F. Sloan of the Hospital for Consumptives of Maryland. Any one wishing to join the association may write me or, if he choses, communicate directly with Dr. C. Saugman.

S. A. Knopf, M.D., 16 West Ninety-Fifth Street, New York.

Queries and Minor Notes

Anonymous Communications and queries on postal cards will not be noticed. Every letter must contain the writer's name and address, but these will be omitted, on request.

BOUDREAU'S IODIN TREATMENT OF TUBERCULOSIS

To the Editor:—1. Where can I find reliable information about Dr. Boudreau's (of Bordeaux) iodin treatment of tuberculosis?

2. Is it true that 120, 200, 300 even 400 drops of tincture of iodin (French Pharmacopeia) may be given internally without any injury to the patient?

Andreas Klövstad, M.D., Chicago.

Answer.—1. We find no reference to the treatment by Boudreau except in the *Journal de médecine de Bordeaux,* 1914, lxxxv, 116, which was abstracted in The Journal, Feb. 14, 1914, p. 577.

2. These doses are excessive. We have no evidence that they can be tolerated by ordinary patients except the statement of Boudreau which is cited in the abstract.

HECHT'S MODIFICATION OF WASSERMANN REACTION

To the Editor:—Please publish the technic of the Hecht-Weinberg reaction which I understand is used as a control for the Wassermann test.

W. S. Pugh, M.D., Washington, D. C.

Answer.—The modification of the Wassermann reaction by Hecht is performed as follows: Alcoholic extract of heart is used. Each serum is tested in four tubes.

Tube 1 contains 0.02 c.c. serum and 0.08 c.c. salt solution.

Tube 2 contains 0.02 c.c. serum and 0.08 c.c. 1 : 50 dilution heart-extract.

Tube 3 contains 0.02 c.c. serum and 0.08 c.c. 1 : 100 dilution heart-extract.

Tube 4 contains 0.02. c.c. serum and 0.08 c.c. 1 :200 dilution heart-extract.

The tubes are put into the incubator for half an hour, or into a water-bath raised to the temperature of 38 C. (100.4 F.) for five or ten minutes. At the end of this period such an amount of a 5 or 10 per cent. emulsion of sheep-cells is added that the fluid in each tube contains 1 per cent. red blood-corpuscles. It is important to avoid the addition of an excess of sheep's blood.

Tube 1 must show complete hemolysis in five or six minutes. In the test of a strongly acting serum all the other tubes show no hemolysis, while a weakly acting serum shows lysis in all but Tube 2.

For recent work on this see Gradwohl's article, p. 240.

Reference may be made to the following article:

Hecht, H.: Eine Vereinfachung der Komplimentbindungsreaktion bei Syphilis, *Wien. klin. Wchnschr.,* 1909, xxii, 265.

SPANISH MEDICAL JOURNALS AND MANUALS

To the Editor:—I wish to subscribe for a medical journal published in Spanish. There are several listed in the Index of The Journal, some published in Cuba, one in Mexico, and one in Spain. I have no way of judging of their relative value; in fact, I want the journal more for the purpose of gaining a familiarity with medical terms in Spanish than for any other purpose, and I would appreciate it if you could suggest a journal and inform me where to write to get it.

I have also written several book companies asking for a practice of medicine in Spanish but have not been able to learn of any. Should you know of such a volume, information as to where I can get it will be appreciated.

F. H. Crail, M.D., East Las Vegas, N. Mex.

Answer.—The following are some representative medical journals published in Spanish:

Boletin de la Asociacion Medica of Porto Rico. Box 1306. San Juan, Porto Rico. Monthly. About $2.
Revista Clinica de Madrid, Ferraz 82, Madrid, Spain, semimonthly, 23 francs (about $4.60).
Revista de Medicina y Cirugia, Consulado 60, Havana, Cuba, semimonthly, $4.50.
Semana Medica, Junin 843, Buenos Aires, Argentina, weekly, $5.
Siglo Medico, Magdalena 34, Madrid, Spain, weekly, $4.
Cronica Medica, Apartado 629, Lima, Peru, semimonthly, $3.

A new Manual de Medicina Interna is in press at Madrid to which the different chapters have been contributed by various Spanish specialists It is under the editorial supervision of Drs. T. Hernando and G. Marañon. The publishers are Imprenta y Libreria Casa Vidal, Atocha 98, Madrid, Spain. The price has not yet been announced.

Prof. José Penna's course of lectures on infectious diseases is published by the press of *Semana Medica,* Junin 843, Buenos Aires, Argentina. Price about $2.50.

UNIT OF ANTITOXIN STRENGTH

To the Editor:—A unit of diphtheria is defined as that quantity which is capable of neutralizing 100 units of toxin, and a unit of toxin is designated as that quantity expressed in fractions of a cubic centimeter which is just sufficient to kill a guinea-pig weighing 250 gm., in the course of four or five days. Is this the unit employed by the manufacturers of diphtheria antitoxin when it was first put on the market? Is the same unit used now to denote the strength of the antitoxin as *found in the shops* at *present?*

At a recent meeting of the Daviess County Medical Society it was charged by some of the older members that the antitoxin used by them in their early experiences was four or five times the strength of that at present marketed by the so-called standard houses, as is shown by the results obtained in the treatment of diphtheria. Can it be possible that this remedy on which the lives of thousands depend has, like many other articles, been monopolized and commercialized so as to yield the largest possible profit to the dealers?

George W. Willeford, M.D., Washington, Ind.

Awnser.—Originally the unit of antitoxic strength was determined according to the method of Behring and was defined as ten times the least quantity of antitoxin serum that will protect a standard (300-gm.) guinea-pig against ten times the least certainly fatal dose of toxic bouillon. This method was unsatisfactory on account of variations in the toxic bouillon which were pointed out by Ehrlich, who showed that this toxin does not possess uniform combining affinity for the antitoxin. Ehrlich therefore devised a method by which a standard powder containing the toxin was produced.

In testing the antitoxic serum, the amount is determined which will protect a 250-gm. guinea-pig against 100 times a fatal dose of the toxin. The quantity of antitoxic serum that preserves life beyond the fourth day is itself the unit. To test the serum itself, guinea-pigs weighing exactly 250 gm. are given toxic bouillon, 0.1 c.c., plus varying quantities of the serum—1/200, 1/300, 1/400 c.c., etc. All live except those receiving less than 1/400 c.c., which die on or about the fourth day. The serum can then be assumed to have 400 units per cubic centimeter unless it is desired to test more closely.

At present the Hygienic Laboratory of the United States Public Health Service has legal control of the manufacture of therapeutic serums and kindred products in the United States, issuing licenses to those engaged in legitimate manufacture and furnishing a standard test serum similar to that of Ehrlich, to those entitled to receive it. The antitoxic strength of diphtheria antitoxin sold in the United States must be determined according to this standard test serum. Samples of the products from licensed manufacturers are bought on the open market and examined at frequent intervals in the Hygienic Laboratory of the Public Health Service. Inspection of the laboratories is repeated at least once a year, and if insanitary conditions are found, or if the products are not what they are asserted to be, the license is suspended.

It will thus be seen that the immunity unit for diphtheria antitoxin is fixed by law, and there is every reason to believe that all the diphtheria antitoxin furnished by licensed manufacturers conforms in strength to the requirements established by the United States government.

Medical Economics

This Department Embodies the Subjects of Post-graduate Work, Contract Practice, Legislation, Medical Defense, and Other Medicolegal and Economic Questions of Interest to Physicians

THE SOCIALIZATION OF MEDICINE

James P. Warbasse, M.D.
NEW YORK

Society demands a special class who shall study the problems of human health and to whom it may look for advice and help in these vital matters. It is aware that the possibilities for good inherent in the application of this special knowledge are very great. The conquest of disease is now recognized as one of the wonderful chapters in human history. This medical knowledge has been won through the sufferings of countless generations of men and women and children. Students of science, long since passed away, have contributed to it. The ancestors of all of us have died to give it to us. It is natural to think of it as social knowledge—the heritage of all—to be denied to none—its benefits to be accessible freely to the descendants of men, all of whom, in due time, must contribute their quota to it.

Turning from the consideration of these larger aspects of medicine and health, and looking on the activities of that class in the community which is possessed of the special knowledge concerning the human organism and the disease which it suffers, we encounter a social anachronism. The medical sciences have made great progress, especially in the last half century, and their power for good in the prevention and treatment of disease is incalculable; still the average individual, well or sick, receives but little of their benefits when the possibilities of what he might receive are considered.

Our modern social system compels the average doctor to be a business man, competing with his fellows for a livelihood. He must make so much money each year to support his family. This must be his primary concern. The more sickness there is, the longer patients are sick, the more operations he can do, just so much better does he seem to prosper in a commercialized society. The practitioner who is most skilful in the methods of the tradesman, who commercializes his manners as well as his knowledge, is apt to have the largest practice and be publicly acclaimed as the most successful; while it is well known, at least to the medical profession, that the doctor who has the most knowledge and the best preparation and ability for his work often languishes for patronage because he does not bring to bear on the public mind the spell which skilful advertising methods insure.

To the commercial character of the practice of medicine is added the distressing fact that the ability of clients to pay the doctor is very poor. The people cannot afford to employ the doctor to do the best he can for them. In the average case, he cannot afford the time that would be required to give his best thought and attention to diagnosis and treatment. In his rounds he meets case after case which calls for serious consideration. Careful inquiry into its history, the scientific methods of the laboratory, personal supervision of the details of treatment, might all be used to the incalculable advantage of the patient. Science may have much to offer. But neither the patient nor the doctor can afford, from a business point of view, to consider these things. A short-cut expedient to often must be adopted; the gambler's chance, that most ills are self-healing, is taken; and the doctor is off to the next case in his quest for a livelihood.

This is the pathos of medicine. Its possibilities are not realized. One of the saddest things I see in medical work is the young man with alert mind, who has been well trained to enter practice—fresh from college, laboratory and hospital—with the vision of life before him—enthusiastic with his knowledge of the possibilities for helpful human service in his profession; and then to witness this young man, thrown into the maelstrom of competition, with the necessity of commercializing the sacred art of conserving human life, degenerate into a humdrum thing of pills and potions, joining clubs or a church as an economic enterprise, and rushing hither and thither in a motor-car in a community which measures success largely by the standards of business.

We do not know whether the economic condition of the average physician is worse or better than it was fifty years ago. We have no figures. But we do know that a large proportion of the medical profession is finding it difficult to make a living. We do know that the relative number of physicians is growing less, especially in communities in which more, and not fewer, are needed. We do know that the dividing of fees, the performing of abortions, cheap and unscientific contract practice, and the resort to quackery are the expedients to which many a capable man of high-minded preferences is driven, against his will, as a matter of economic necessity.

Do we desire that these evil conditions, springing from the competitive system, should be carried into the future? Is the time not coming for the more rapid socialization of the agencies for the promotion of public health? Other public necessities are undergoing this change. The people in progressive communities no longer leave to commercial enterprise such matters as the supplying of water for the people, the disposal of sewage, the cleaning of the streets, the education of the children, the carrying of mails, and the extinguishing of fires; and every year sees forward-looking communities add to the things that are taken out of the profit-making class and administered directly for the specific purpose which gives them their value.

The modern and inevitable trend is in the direction of removing the physician and sanitarian from the field of private and competitive business, and bringing them closer to the needs of the people. In Europe, this is being effected by the government and by the agency of sickness and insurance societies. Socialized medical attention is being rapidly brought to the people. The towns in France are beginning to apply direct action; municipal councils have passed ordinances providing that any resident of the town may consult any licensed physician without charge. The municipality pays the doctor. The national insurance act in England is the most sweeping piece of legislation in the direction of the socialization of medicine that the world has seen. Besides medical attention, the act provides insurance against sickness and disability for all who have an income below a certain amount. At present, 14,000,000 in England are subject to this law. It is intended that in the near future the act shall be made to apply to the dependents of the insured persons, so that the service shall embrace four-fifths of the population of England.

In the United States, as in the European countries, there is an increasing demand for trained sanitarians. It is notable that even the smaller municipalities and counties in rural districts are appointing full-time health officers. The schools, the courts, insurance acts, the industries and many of the municipal departments are making official places for the physician and sanitarian. The modern trend is illustrated by the city of Detroit, which in 1901 had in its health department, twenty-four employees; it now has about 200 employees. Ten years ago it had milk inspectors; now it has dairy inspectors. The health commissioner has announced that meat inspection cannot be made effective until the city owns its own slaughter-house.

It is evident that two agencies are at work for the socialization of the forces making for the public health. One is the state, acting in response to the political demands of the people; the other is private enterprise on the part of groups of individuals, forming themselves into cooperative societies. The latter is the syndicalist principle.

Science and expert ability have so much to offer in serious diseases that their treatment can no longer be conducted by a single individual. Team-work is necessary. There are blood examinations, urinalysis, Roentgen-ray examinations, bacteriologic examinations and many other tests and methods requiring expert knowledge. This is best secured in the hospital. The rich can afford to have it brought to them. The poor secure it not at all or only in some of the better municipal hospitals. Middle-class people cannot afford this team-work either at their homes or in the hospital, and accordingly suffer for want of the best that science can offer.

It has long been recognized that contagious diseases are the concern of all the people, and they have been so treated. This is because of the possibilities of their spreading from the sick to the well. Society is now much concerned about mental diseases. It has taken cognizance of the insane because of their irresponsibility; and now, because of their relation to the problems of eugenics, it is concerned for all with transmissible mental defects.

In response to the same psychology, all other diseases are becoming matters of public concern, because, even though they may not spread from sick individuals, still they have their origin in food, housing, occupations or other conditions which are matters of public concern. Because of the closeness of our human relations and interdependability on one another, any condition which society harbors, which is capable of producing disease, is coming to be recognized as the concern of all. Therefore if society is concerned that it may suffer from contagious disease in an individual, it must also be concerned that it may suffer from disease in a cow, disorder in a railroad or steamboat, or defective sanitation in a mill or mine. "Injury to one is injury to all," is coming to have an ethical as well as economic significance.

As the manifold public activities, demanding physicians and sanitarians, increase, the proportion of physicians, engaged in competitive private practice, decreases.

The education of men and women for this work is now ready to pass into the hands of the people. Medical education in this country has gone through the first stage, that of private commercial enterprise, and is now well advanced in the second stage, that of regulation and control by the state. The third is that in which it becomes wholly a public function. Already we have many public medical schools in which the people are educating their own physicians.

This great question of the public health, we should bear in mind, is by no means a medical question. In its administration are needed, not only the physician, but also the sanitarian, nurse, chemist, engineer, statistician and social executive.

As I look into the future, I see communities divided into districts, each with a sanitarian responsible for its health. Each district should have not only a social center but also a sanitary center. Here should be a laboratory for diagnosis, equipped with all the appliances and facilities of modern science, with trained experts in every department. In connection with it should be a central hospital. An outpatient and an inpatient department should supplement one another. This should be a community center in which the problems of the prevention of disease should be worked out. Prevention should be the key-note of the sanitary and medical work, and should supplant the old idea of making treatment the aim of medical effort.

According to the needs of the people, specialists in all branches should be located at convenient intervals in dispensaries and hospitals. There should be a hospital in every community—country as well as town. The number of hospitals should be regulated by the population and geography. A single tuberculosis dispensary should be provided to cover a certain number of sanitary districts. Here the people should be taught how to prevent tuberculosis; and the tuberculous should receive advice and help. In England, the new insurance act provides a tuberculosis dispensary for every 150,000 inhabitants. It provides 200 sanitariums with accommodations at the rate of one bed for every 5,000 of population.

A Roentgen-ray equipment should be located in every community. Such special institutions should be complete; and, being as perfect as science could make them, they should prove more effective than the multitude of little inadequate equipments scattered about a city as we now find them. A similar plan with reference to surgical operations and other special work would naturally be most effective. A corps of surgeon, with central equipment, for a given population should be provided.

The people should have a wide range of choice in the selection of physicians. No physician should be called on to serve more than a certain number of patients, for the physician as well as the patient has rights to be respected. The special line of work into which a physician enters should be determined by his aptitude. Vocational selection should be employed. These public servants should receive compensation commensurate with their services and their needs, insurance and pensions, relieving them utterly from the fear of poverty.

What advantages may we expect from this inevitable socialization of the agencies making for public health? In the first place they will be accompanied by the socialization of other public necessities. It is all a part of one big human movement. Things are to be done *because they need to be done,* and not for the purpose of making money, with the human value of the work as a by-product. The primary function of the doctor will be to prevent disease and to relieve suffering. It will not be, as it now is, to make money by preventing disease and relieving suffering—so far as is consistent with making money, just as the primary function of the railroad industry will be to carry passengers and commodities safely and expeditiously. It will not be, as it now is, to make dividends and interest on stocks and bonds by carrying passengers and commodities—as safely and as expeditiously as is consistent with making dividends and interest on stocks and bonds. These two motives—the old and the new, the one addressed to property and the other addressed to human life—are utterly and incomparably different.

At the same time the free administration of justice, as well as of health agencies, should become a reality. Under such a régime the expert medical witness should be the agent of the people. His function should be to give impartial information. He should be in the service of all the people in the interest of truth and justice, just as the judge should be; and securing justice should not be a matter of barter and price any more than should the securing of medical help.

Among the important functions now undertaken by the people in but a desultory way are the inspection of sources of water-supply, the analysis of water, the economic and sanitary disposal of sewage and garbage, the regulation of buildings from a sanitary point of view, the sanitary control of schools, offices, public buildings, factories, bakeries and mines, and the protection of the health workers in the various trades. When the workers alone are the employers and owners of the industries, we may be sure that these things will receive better attention.

The same may be said of the food- and drug-supply. These may be expected to become socialized along with other agencies which have to do with health. The analysis and study of these things, and then their public control, must be a part of the same movement. Water, one of our most important foods, is now procured to the people as a public function; milk and bread must follow the course of the water, as surely as the day follows the night.

Under these ideal, or, I prefer to say, normal conditions, competition would be stimulated. There would be competition among the health officers to keep down morbidity in their respective districts, and to show the best results in treatment. There would be wholesome competition among physicians to attain to excellence in their work; for that would be the object toward which they might strive unhampered if the dollar were eliminated from the struggle. Experience shows this to be the case. The best results are being secured to-day where scientific men are carrying on their work unhampered by economic competition.

Individual initiative would be stimulated. In this era of money making, the public mind has fallen into the habit of judging success by the dollar standard. To take the agencies of health out of this category would place them where they might operate unrestrained by the pursuit of profits. It is a noteworthy fact that the great discoveries in science, the discoveries that have contributed the most to human life, have not been inspired by the reward of money. Moreover, most so-called discoveries represent but the accumulated knowledge of many generations, and belong to no man or set of men. They are a common heritage, and it is highly presumptive for any individual to add a final touch to an age-long chain of knowledge, and then lay personal claim to the whole. All the knowledge of the medical sciences is common knowledge—not to be denied to the humblest who needs it.

With such agencies as these at work, human life could be made sweeter. In the place of our commercialized organization, we should have a more equable and humane distribution of health forces. It is calculated by insurance actuaries that in the United States there are 600,000 deaths and in England 300,000 deaths annually, which are entirely preventable, and which could be prevented if the object of our medical effort were the saving of life.

Among the working people the infant mortality is horribly high because the babies of the working people cannot be provided with the attentions and the environment necessary to save their lives. These babies are just as precious as the babies of the rich. Tuberculosis and most other human ills have an economic significance. Among the wealthy there now is a surfeit of doctors; among the poor, oo few. In Pennsylvania there are 100,000 births annually i rural places, with no hospital near, and very few, poorly prepared, underpaid and overworked doctors. I believe that the wives of coal-miners and iron-workers are as worthy of the best scientific attention and the tenderest care in the hours of their need as are the wives of the rich. I believe that they should have it, not as a charity or welfare enterprise, but as a matter of social justice. It is their right.

I am aware that this view is contrary to the conventional mortality of present-day society, which, with hypocrisy in its heart, prays for it one day in the week, but which votes against it, acts against it, and adjusts its affairs against it at all times. The workers, who create the wealth, some day will demand at least this for their women, unless the people as a whole anticipate it and do it for them.

Soldiers and policemen receive gratuitous medical attention. Is it not reasonable to ask, Is not the farm-worker as important as they? What of all those who perform useful service? And what of the women who, in the shadow of death, replenish the supply of worn-out workers—who feed the mills and mines their human grist? Are these not performing necessary public service?

Keeping people well is the most important employment for the medical profession. Society is going to demand the talents of the physician to this end. It is for this that society should bestow its rewards.

The socialization of medicine is coming. The time now is here for the medical profession to acknowledge that it is tired of the eternal struggle for advantage over one's neighbor. The value of cooperation in science is proved. Medical practice withholds itself from the field of science so long as it continues a competitive business. Its full possibilities will be realized only when its whole effort is expended in the conservation of human health and life.

Therapeutic Utilization of Anaphylactic Shock.—One of the features of anaphylaxis is that the blood seems to become thicker, and Dufour and Crow deliberately induced anaphylaxis recently in an effort to arrest severe hemorrhagic purpura following the first menstruation. The uterus and gums had bled almost constantly for thirteen days. The girl had been treated with antitoxin during diphtheria at 18 months, and now besides the ordinary measures, small amounts of antitoxin were injected and after each injection the blood coagulated in much less time than before and the hemorrhages were arrested. In their communication (*Bull. de la Soc. des Hôp.*, 1914, xxx, 979). Dufour and Crow say that it might be possible to induce passive anaphylaxis for the purpose, injecting first the serum of an animal in a state of anaphylaxis and then the "unchaining" dose of the antitoxin.

Medical Education and State Boards of Registration

Minnesota April Report

Dr. Thomas S. McDavitt, secretary of the Minnesota State Board of Medical Examiners, reports the oral and written examination held at Minneapolis, April 7-9, 1914. The number of subjects examined in was 11; total number of questions, 100; percentage required to pass, 75. The total number of candidates examined was 5, all of whom passed. Eight candidates were licensed through reciprocity. The following colleges were represented:

PASSED

College	Year Grad.	Per Cent.
Chicago College of Medicine and Surgery	(1913)	85
Northwestern University	(1913)	87
Rush Medical College	(1913)	79
University and Bellevue Hospital Medical College	(1913)	87
Milwaukee Medical College	(1908)	76

LICENSED THROUGH RECIPROCITY

College	Year Grad.	Reciprocity with
Northwestern University (1896) Wisconsin;	(1905)	Wisconsin
Rush Medical College (1905) Illinois;	(1912)	Illinois
University of Illinois	(1912)	Illinois
Marquette University (1913) Wisconsin; (1913) Wisconsin;	(1913)	Wisconsin.

Colorado April Report

Dr. David A. Strickler, secretary of the Colorado State Board of Medical Examiners, reports the oral and written examination held at Denver, April 7, 1914. The number of subjects examined in was 8; total number of questions asked, 80; percentage required to pass, 75. The total number of candidates examined was 7, of whom 6 passed and 1 failed. Fourteen candidates were licensed through reciprocity. The following colleges were represented:

PASSED

College	Year Grad.	Per Cent.
University of Colorado	(1912)	81.9, 83.3
Northwestern University	(1913)	88.9
Rush Medical College	(1913)	88.6
Starling-Ohio Medical College	(1913)	88.1
Royal College of Physicians and Surgeons, Ireland	(1913)	84.8
FAILED		
Non-graduate		52.9

LICENSED THROUGH RECIPROCITY

College	Year Grad.	Reciprocity with
California Eclectic Medical College	(1904)	California
College of Physicians and Surgeons, Chicago	(1908)	Wisconsin
Rush Medical College	(1877)	Illinois
Indiana University	(1910)	Indiana
Hospital College of Medicine, Louisville	(1906)	Kentucky
Eclectic Medical University, Kansas City	(1900)	Missouri
Kansas City Medical College	(1886)	Missouri
Marion-Sims College of Medicine	(1899)	Missouri
St. Louis College of Physicians and Surgeons	(1908)	Tennessee
John A. Creighton Medical College	(1913)	Nebraska
New York University, Med. College	(1889)	Ohio
Hahnemann Medical Coll. and Hosp., Philadelphia	(1907)	Ohio
University of Nashville	(1903)	Tennessee
Medical College of Virginia	(1904)	Virginia

ANATOMY

1. Describe the lower half of the humerus. 2. Describe the knee-joint. 3. Give complete anatomy of the pectoralis major and minor muscles. 4. State how the abdomen is divided superficially into regions. Name the regions so formed. 5. Give the course and branches of the axillary artery. 6. Describe carefully the parotid gland and its duct. 7. Give a full description of the duodenum. 8. Give anatomy and surgical anatomy of the crural canal. 9. Describe the prostate gland. 10. Give the extracranial course and distribution of the vagus (tenth cranial nerve).

PHYSIOLOGY

1. Discuss the physiology of respiration. 2. Describe the salivary glands (*a*) as to their histologic structure, (*b*) their secretion, (*c*) their innervation, and (*d*) the influence of their secretion on normal digestion. 3. Trace a morsel of proteid food through the process of its digestion and elimination. 4. Describe the physiologic action of the cardiac nerves. 5. What physical factors are concerned in the production of blood-pressure and blood velocity? 6. Define dialysis and osmosis in the body; give example. 7. Name three organs of secretion and two of excretion. Mention the physiologic constituents of the product of each organ named. 8. Describe the structure and function

of the spinal cord. 9. Name the organs of special sense, and describe in detail the physiology of one. 10. Mention four factors essential to impregnation.

CHEMISTRY

1. What is chemical affinity? 2. What are the laws of definite and multiple proportions? 3. Define valence. 4. What is atomic weight and how determined? 5. What are the properties of bases? 6. Define salts, acid salts, basic salts and double salts. 7. Complete the chemical equation $Na_2SO_3+CaCl_2=?$ 8. Give physical and chemical properties of oxygen. 9. What is the difference between a mixture and a chemical compound? 10. Give some examples of univalent, bivalent, trivalent and quadrivalent elements.

PATHOLOGY

1. Give the pathology of hemorrhage of the brain. 2. Name the tumors of the mammary gland. 3. Give the pathology of tabes dorsalis. 4. Explain the pathology of angina pectoris. 5. Give the pathology associated with jaundice. 6. Give the morbid anatomy associated with fluid in the abdominal cavity. 7. Explain sarcoma, carcinoma, endothelioma, epithelioma, embolism, thrombosis. 8. Give the pathology associated with hemorrhage from the urinary tract. 9. Explain pathology of suppurative arthritis. 10. Give the pathology of typhoid fever.

SYMPTOMATOLOGY

1. State your plan of percussing the chest, and give the results of percussion of the chest in a normal case. 2. Describe bronchial, vesicular and bronchovesicular breathing and tell where each is normally found. 3. Tell how the spleen is examined and the possible significance of its enlargement. 4. Give the normal location of the apex-beat of the heart and the causes of its displacement. 5. Discuss the pathologic variations in character of the apex-beat. 6. Describe and give the significance of murmurs arising from the mitral valve. 7. What are the symptoms of leukemia? How is it to be distinguished from pseudoleukemia or Hodgkin's disease? 8. What are the causes and symptoms of exophthalmic goiter? 9. Give the causes and symptoms of chronic interstitial nephritis. 10. Give the symptoms, diagnosis, prognosis and complications of diabetes mellitus.

TOXICOLOGY

1. What are the symptoms of acetanilid poisoning? 2. Give treatment of same. 3. What poisons produce neuritis? 4. Give symptoms of chronic lead-poisoning. 5. Give symptoms of one poisoned by morphin. 6. Give treatment. 7. Give post-mortem appearance. 8. Give symptoms of one poisoned with phosphorus. 9. Give treatment of one poisoned with phosphorus. 10. Give post-mortem appearance.

SURGERY

1. (*a*) Describe the usual course of metastasis following carcinoma of the breast. (*b*) Describe the lymphatic drainage of the lower lip, and explain its surgical significance. 2. Describe the usual deformity accompanying fracture of the neck of the femur. 3. Give the causes and symptoms of coxa vara. 4. Describe the usual resultant deformity in untreated cases of Pott's fracture. 5. What are the dangers accompanying excision of a goiter? 6. Give the treatment of a simple oblique fracture of the femoral shaft. 7. What are the effects of removal of the spleen? 8. What are the symptoms of traumatic rupture of the kidney? 9. Name some of the more important localizing symptoms which may accompany fracture of the vault of the skull. 10. Give the differential diagnosis between acute appendicitis and acute cholecystitis.

OBSTETRICS

1. Discuss your treatment of a case of normal labor. 2. What instructions would you give to a primipara (normal) who comes in the third month of pregnancy to engage your services? 3. Discuss the causes and treatment of post-partum hemorrhage. 4. Discuss the pathogenesis of puerperal infection caused by the streptococcus group of organisms. 5. Discuss the care of the breasts during pregnancy and during the puerperium. 6. Classify the indications for low forceps. 7. Give four normal diameters of the pelvic inlet. 8. Discuss the early diagnosis of eclampsia and briefly outline the treatment. 9. What will you carry in your obstetric bag? 10. Name the pathologic conditions that may result from puerperal sepsis.

Book Notices

INFLUENZA: ITS HISTORY, NATURE, CAUSE AND TREATMENT. By Arthur F. Hopkirk, M.D. Cloth. Price, $1.25. Pp. 209. New York: Charles Scribner's Sons, 1914.

This is not, as might be supposed, a careful medical monograph on influenza; indeed, the author expressly disclaims the purpose of writing an exhaustive work on the subject. He does not state to what class of readers his book is addressed. The treatment seems slightly technical for ordinary laymen, whereas the directions and glossary seem to be intended for nurses. Almost half of the volume is occupied with historical matter. The etiology of the disease is regarded as settled, being attributed without hesitancy, in spite of the insufficiency of the evidence, to the *Bacillus influenzae*. In the discussion of the prevention and treatment of the disease, evidence that the book is intended for the lay public becomes obvious and the idea persists that certain proprietary foods and nostrums are being favored with a write-up. Along with a goodly amount of such advice as is common to books on personal hygiene and a modicum of purely medical advice there are numerous directions for the use of nostrums. The prevention of influenza is dismissed with the recommendation to take a daily dose of quinin and suck Formamint lozenges when actually exposed to the danger of infection. Antiphlogistine is the author's standard application for inflammation and pain. Malto-Yerbine he uses for cough, and Regulin is recommended as a cathartic. This to be sure, seems a limited list, but in the diet rules the restriction becomes marked. The proprietary foods recommended may be said to have a cosmopolitan reputation, although it is rare that writers of books insist on them with such persistency as Hopkirk. Not even the noted European clinicians who have exploited cottage cheese and glycerophosphates in original articles have equaled the following: "Breakfast, which should be taken at about 8:30 a. m., is one of the meals at which Sanatogen must always be administered," and so on for eight pages. Carnine-Lefrancq, and Benger's food are occasionally mentioned, but always, *except once, the author returns to his first* love and insists on the fraudulently exploited Sanatogen. Foreign physicians, especially British, may find such a book tolerable and perhaps instructive, but for Americans the ordinary text-books will probably furnish an equal quantity of useful information without induction of nausea by the persistent recommendation of nostrums. The astonishing thing is that Scribner's would allow their imprint on such a book.

SCROFULOSIS. By Prof. Dr. G. Cornet. Translated from the Second German Edition by J. E. Bullock, M.D., Assistant Medical Officer, Eversfield Chest Hospital, St. Leonards-on-Sea. Cloth. Price, $5 net. Pp. 515. New York: William Wood & Co., 1914.

The idea may be somewhat startling that a book of five hundred pages should be devoted to the discussion of a condition to which at most a page or so is given in our text-books. The meaning of the terms "lymphatism" and "exudative diathesis" which replace in modern thought the old idea of scrofula are discussed at great length, but the final conclusion is that accepted by most authors that scrofula is merely external tuberculosis. The author rejects the view that has been recently gaining ground that tuberculosis infection is predominantly frequent in childhood and that adult tuberculosis is a mere revivification of an *infection* latent since childhood. The book forms a valuable treatise on the local and external tuberculosis of childhood.

TROPICAL MEDICINE AND HYGIENE. By C. W. Daniels, M.B., F.R.C.P., Lecturer on Tropical Diseases, London Hospital. Second Edition. *In Three Parts*—Part 1: Diseases Due to Protozoa. Cloth. Price, $3 net. Pp. 277, with 73 illustrations. New York: William Wood & Co., 1913.

This work is divided into parts corresponding with the classification of the micro-organism causing the disease. The present volume includes diseases caused by protozoa. In the preface the author states that this arrangement has been justified. About half the volume is devoted to malaria and blackwater fever. The connection of the latter disease with malaria is not established and its etiology is unknown. The other diseases considered in this volume are yellow fever, African relapsing fever, kala-azar, yaws and some minor affections. An appendix gives some valuable data in the form of dates, measurements, etc. The book is well illustrated and forms a handy manual on these important diseases.

ANATOMY AND PHYSIOLOGY. A Text-Book for Nurses. By John Forsyth Little, M.D., Assistant Demonstrator of Anatomy, Jefferson Medical College, Philadelphia. Cloth. Price, $1.75 net. Pp. 483, with 153 illustrations. Philadelphia: Lea & Febiger, 1914.

In this work there is, of course, nothing original, but it is an excellent compilation of the most important facts in anatomy and physiology necessary to nurses. The illustrations are taken chiefly from well-known text-books. A very good glossary completes the book.

Medicolegal

Statements Made to and by Attending Surgeons Employed by Railroad Company

(Chicago & Erie Railroad Co. vs. Shenkel (Ind.), 104 N. E. R. 50)

The Appellate Court of Indiana, Division No. 1, says that, in this personal injury case, brought by Shenkel, the railroad company offered in evidence a statement identified as signed by the plaintiff and certified by his attending surgeons, who were employees of the company. The statement related to the time, place and manner in which the injury was received. Objection was made on the ground that it was shown that the statement which was taken by the attending physician in the sick-room was a confidential communication under the statute, and that the offer was an attempt to prove by indirection what could not be proved directly. The objection was rightly sustained. The excluded statement was not only a "communication to" the attending physicians "in the course of their professional business," but also a statement of the physicians themselves. After the plaintiff's signature the instruction contained the following: "If operation was performed, did the injured person consent? Ans. None at this writing. Give date of operation, names of operating surgeons, witnesses to operation. Ans. None at this writing." Then followed the certificate and signatures of the "attending physicians." This was clearly an attempt to get before the jury by this indirect method a confidential communication of the plaintiff, and also the statement of the physicians made at the same time and under the same circumstances. Statements made to or by physicians employed by a railroad company while attending the injured party shortly after his injury should be closely scrutinized because of the situation and condition of the injured party and the natural bias and influence of physicians so situated. When, as in this case, it clearly appears that the physicians were rendering the patient medical and surgical attention when the communication was made, and that he was depending on them for such services, and also that the instrument is a statement of both patient and physicians, made under like circumstances, some latitude must necessarily be given the trial court in determining whether the evidence offered does or does not come within the prohibition of the statute as to privileged communications. The offered evidence in this case was so clearly within the spirit and meaning of the statute that to admit it on the ground that it was only a signed statement of the plaintiff made out of court, tending to contradict his testimony, would be a surrender to technical form in violation of the spirit, if not of the letter, of the statute.

Privilege Extends to Physician Invited to Assist in Diagnosing Case

(Mutual Life Insurance Company of New York vs. Owen (Ark.), 164 S. W. R. 720)

The Supreme Court of Arkansas says that a Dr. Brown invited a guest of his named Dr. Smith to go with him to see his patients, and that Dr. Smith accompanied him and was present when he examined and prescribed for the insured in this case. It was true that Dr. Smith did not visit the insured for the purpose of personally treating him, but to examine the patient as a physician, at the request of Dr. Brown, to assist him in diagnosing the case. It was the intention of Dr. Brown to use any knowledge that he might acquire of the patient's condition as the result of the joint examination by himself and Dr. Smith. Hence it might be said that Dr. Smith went, not only as a matter of courtesy to Dr. Brown, but also for the purpose of assisting him in diagnosing the disease and treating the patient. This clearly brought him within the spirit of the statute and prohibited him from disclosing any knowledge of the patient's condition thus acquired, without the consent of the insured's representatives in this suit.

Society Proceedings

CONNECTICUT STATE MEDICAL SOCIETY

One Hundred and Twenty-Second Annual Meeting, held at New Haven, May 20 and 21, 1914

(Concluded from page 191)

Subacute Hyperthyroidism

Dr. J. M. Flint, New Haven: A woman, aged 38, had a perfectly typical clinical picture of subacute hyperthyroidism in exophthalmic goiter. The onset commenced last fall, without any factor with which she can make association. She began to get nervous; her eyes began to be a trifle prominent, and the swelling in the neck appeared. The physical examination showed few ocular symptoms. There was no mononucleosis, which is usually associated with the more serious cases. This patient has a relatively small goiter; the right lobe is chiefly involved. It is soft, and has no palpable thrill; but there is a very distinct bruit heard on both sides. We do the simple operation in the toxic cases; that is, ligation of the superior thyroids on one or both sides. There is no evidence here of thymus persistence, which is one of the interesting chapters in the recent discussion of exophthalmic goiter.

Fractures of the Clavicle

Dr. W. E. Hartshorn, New Haven: We had quite a problem presented to us in the treatment of fractures of the clavicle at the dispensary. We found that with the ordinary plaster dressings, it was impossible to reduce the deformity. We did employ the ordinary Sayre dressing. At the end of the second week, in the treatment of these cases, or of the third in adults, the arm was restricted, and the forearm placed in a sling. Sayre's dressing is not very satisfactory, because it is extremely uncomfortable for the patient, and with enough strain put on the adhesive bands really to secure reduction, the dressing is so tight that the patient cannot wear it. We next attempted to obtain adjustment by means of the Collins method; but the same problem was offered as before, and the method did not stand up well. We then adopted the Bellamy dressing. It is better than the others, but was also very uncomfortable to wear. Last, we tried the Peckham dressing, and it works very well in children. It reduces the deformity, is comfortable to wear, and can be put on over the clothing.

Apparatus for Aspiration and Irrigation of Joints

Dr. J. W. Churchman, New Haven, Conn.: The apparatus which we use consists of a series of tubes which connect, through common openings, with the tube inserted into the joint and with the tube leading from the pump, which can provide a force or suction power. The apparatus can be taken apart and cleaned, and can be autoclaved just as it stands. It is necessary to get the joint clean, the walls of which are lined and covered with little chunks of fibrin that must first be washed clean. We collect the pus for purposes of culture, forcing it into a bottle. When the joint is clean we fill the bottle with what we want to use, and then force that into the joint. After the joint is full of the irrigating fluid, we draw it back again, and we may even repeat that operation with another fluid. I have used this method in two cases of arthritis and the results have been very satisfactory; in fact the second patient was completely cured.

Influence of Gentian Violet on Tissue-Cultures

Dr. J. W. Churchman, New Haven: We have found that a marked bactericidal action is possessed by gentian violet dye. Gram-positive organisms were killed by it. It cannot be injected into the body, because if it is injected into the ear of a rabbit in doses sufficient to kill the germs, the animal changes the stain within two hours and renders it harmless to the organisms. That fact, however, may turn out to be of value, because if the stain can be made to reach the organisms and stay unchanged long enough to kill them, and the body will then change the stain and get rid of it, we shall have a very valuable antiseptic. We have some cultures of tissues growing in gentian violet, absolutely unimpaired.

Stitch Ulcers After Gastro-Enterostomy

Dr. J. M. Flint, New Haven: The end-results of our investigations make us believe that stitch ulcers of the jejunum following gastro-enterostomy are due either to sloughing out of the stitch or to changes in the circulation that the stitch has produced.

Case of Facial Hemiatrophy

Dr. Max Mailhouse, New Haven: My patient at the age of 18 had some discolored spots (from ½ to 2 inches in diameter), and gradually atrophy set in, with some twitching of the muscles and some pain in them; the atrophy involved skin, subcutaneous cellular tissue, muscles and bone. His family history is entirely negative, and there is nothing specific in the case. There is no beard growing on the right side of the face, but there is a beard on the left side. The patient's mouth has been drawn to the right; he can move his jaw to the left, but not to the right. There is marked atrophy of the right side of the tongue and also of the soft palate, but the patient has no difficulty in swallowing. His right hand is much larger than his left.

Non-Protein Nitrogen in Urea

Dr. Wilder Tileston, New Haven: A number of ingenious methods have been devised for the accurate estimation of various substances in the blood. Among the most important are: the methods for the estimation of cholesterin in the blood; the estimation of sugar in diabetes; the estimation of uric acid, and lastly, the estimation of the non-protein nitrogen in the urea. I shall deal largely with the last-named. In health, the method has but little effect, the chief interest centering around nephritis and other kidney diseases. We have examined a considerable number of such cases. A uremic case showed the effect of diet on the total nitrogen. There were 56 mg. of non-protein nitrogen. After a few days of low-protein diet, it sank to 24 mg. In nephritis we have found all figures, from normal to ten times the normal. In no case of uremia which showed high figures did the patient live more than a few weeks. This estimation also promises to be of value in hypertrophy of the prostate when operation is considered; but any patient showing as high as 75 mg. would be a doubtful case for operation. In all cases of lead-poisoning we found increased nitrogen—the lowest being 30 mg. This shows how injurious the influence of lead is on the kidneys. Acute intestinal obstruction was the only disease not of the kidney that showed a marked increase. Acute infectious diseases showed only a moderate increase. In syphilis we found a marked increase in about half the cases, indicating that the kidneys are more often affected than has hitherto been supposed. The value of this method from the point of view of diagnosis and prognosis is very apparent.

Pericarditis

Dr. George Blumer, New Haven: I will speak of some points that have come up in our experience with pericarditis, especially with effusion. This disease is often almost without pain. One patient with effusion came to the hospital complaining of pain, one made no complaint, and the other two complained of discomfort in the region of the heart. Pericarditis is often recognized only on the necropsy table, and is frequently found unexpectedly in routine examinations. We have had two or three cases in which the effusion was undoubtedly proved and in which the apex impulse did not disappear. The presence of pericardial friction sound does not rule out pericarditis with effusion. One is apt to mistake extensive effusion with consolidation, for pleurisy with effusion. In fact, the pericardium has been tapped by mistake for the pleura. The Roentgen ray is valuable, not only in diagnosis, but also as an indication of where to tap the patient. We had one case in which we tapped and the dulness persisted. Then we tapped the pleura, and found that there was pleurisy.

THE AMERICAN THERAPEUTIC SOCIETY

Fifteenth Annual Meeting, held at Albany, N. Y., May 29 and 30, 1914

The President, Dr. Howard Van Rensslaer, Albany,
in the Chair

Officers

The following officers were elected for the ensuing year: president, Dr. Francis M. Pottenger, Monrovia, Cal.; vice-presidents, Dr. Robert T. Morris, New York; Dr. Spencer L. Dawes, Albany; Dr. J. Madison Taylor, Philadelphia; secretary, Dr. Lewis H. Taylor, Washington, D. C. (reelected); treasurer, Dr. A. Ernest Gallant, New York. (reelected).

President's Address: A Study of the Therapeutic Effects of Thermopenetration in the Treatment of Phthisis Pulmonalis

Dr. Howard Van Rensselaer, Albany, N. Y.: By theoretical reasoning it would seem that when there is an abnormal amount of blood in the lungs, tubercle bacilli are more readily destroyed, or at least prevented from multiplying as they do in the anemic condition of run-down persons. Theoretically also, what is needed is something which will directly heat up the lung as a whole, or any special part of it, without producing a general congestion over a large area of the body. The employment of the high-frequency current has given the best results of any special treatment we have ever tried. The patients were divided impartially into three classes for treatment: (1) those given the high-frequency current; (2) those given tuberculin, and (3) those given no special treatment, which we called the control cases. The benefits so far obtained from high-frequency current, in comparison with the other methods, are: (1) the ability to keep the patients longer in the hospital; (2) the greater increase in weight (five times greater), and the larger percentage of those who increased, and (3) apparent cure or arrest of 69 per cent. of the cases in the discharged patients, against 15.5 per cent. as the best of the other methods.

The Acquisition of Tuberculosis

Dr. William H. Porter, New York: It is established, so far as bacteriologic research has advanced our knowledge, that tuberculosis is not, and cannot be, transmitted from the mother to the offspring *in utero*, and, consequently, the disease is never inherited. The most that can be inherited is a definite chemicophysiologic activity, and this likewise occurs much less frequently than is generally supposed. As the weeks and years advance, the nutritive vitality of the organism progressively deteriorates, local inflammations are excited, the proper soil is developed, finally the non-tuberculous system is successfully inoculated with tubercle bacilli, and the lesions characteristic of true tuberculosis are developed. These anatomic changes have never been found in the human organism until after the fourth week of extra-uterine life, and the frequency with which they are found increases yearly from 5 per cent. up to the fifteenth year, when the maximum of 30 per cent. is reached. While it is impossible to exterminate tuberculosis as completely as theory would indicate might be possible, it is still within the range of probability to prevent the development of hundreds of thousands of cases every year. Its accomplishment, however, is to be effected along the line of the prevention of a soil suitable to the growth of the tubercle bacilli, rather than by overstrenuous efforts to prevent inoculation.

Volatile Substances Isolated from Tubercle Bacilli Cultures, and Their Effects on Experimental Tuberculosis

Dr. Ernest Zueblin, Baltimore: I have made a series of experiments on guinea-pigs from which it may be concluded that in tubercle bacilli there is contained a volatile substance of a lipoid nature chemically which possesses a much more strongly penetrating odor than the original bacilli culture. In literature we find a few reports of acute intoxication resulting from the emulsification or evaporation intoxication of tubercle bacilli cultures. According to my interpretation, underlying the manifestations noted there is not a simple intoxication, but combined with it there is probably a hypersensitiveness, since the symptoms appear to be more pronounced in individuals giving a marked tuberculin reaction.

DISCUSSION

Dr. Francis M. Pottenger, Monrovia, Cal.: In a tuberculin the protein or the lipoid element may predominate, and the same is true of the antibodies against the two groups. I cannot accept the position of Dr. Porter that tuberculosis is never transmitted to the offspring *in utero*; I believe that in certain instances such transmission does occur. In advanced cases of the disease tubercle bacilli are constantly escaping into the blood; it would therefore seem easy for them to pass through the placenta. It is a fact, however, that in the great majority of instances the infection is contracted after birth.

The Tuberculosis Home Hospital Experiment

Dr. P. Brynberg Porter, New York: In the "East River Homes," built by philanthropic persons and placed at the disposal of the New York association for Improving the Condition of the Poor, twenty-seven families, seventy-nine members of which were tuberculous, lived in sanitary homes, had ample sunshine, fresh air, good and abundant nourishment, freedom from undue work and worry, reasonable segregation, skilful medical attendance, and constant nursing supervision. The results observed in the tuberculous patients compare very favorably with those at the best sanatoriums, while the expense was less than that of institutional treatment. No new cases of the disease developed in any of the families. At the time of admission the average income of the six families which were discharged as rehabilitated was only $6.42 a week, while when they were discharged their average income amounted to $15 a week.

DISCUSSION

Dr. Linsly R. Williams, Albany, N. Y.: It seemed to the projectors of the East River Homes that if some combination for the benefit of the whole family could be worked out, it would be a great gain. The question of the complete control of the tuberculous patient was the marked characteristic of the experiment, and one important point was to see that he was not overworked. Altogether, this is a very hopeful scheme, and one which I think might be adopted with advantage by other cities.

Digitalis in Chronic Diseases of the Heart: the Advisability of Its Continuous Administration

Dr. Louis F. Bishop, New York: Fibrillation of the auricle and very serious valvular disease are the conditions most often benefited by the use of digitalis over periods of months and years. The amount required is largely a matter of experiment. In auricular fibrillation it is a good rule to keep the pulse about 90, while in valvular disease it is well to keep the tonicity of the heart-muscle at such a point as to insure a minimum amount of shortness of breath. A third type of disease in which the continuous use of digitalis is often indicated is presented by the later stage of arteriosclerosis; when there is a tendency for the high blood-pressure to change to a pressure falling below the line of compensation. The use of so powerful an agent requires constant supervision, and every heart-patient should be seen at least once a month. There are many persons whose lives depend on this continuous use of digitalis, and the drug may eventually bring about a true strengthening of the heart. There is no such condition as a digitalis habit.

DISCUSSION

Dr. A. D. Blackader, Montreal: I prefer to give digitalis in courses, and this plan is combined with rest—at least partial rest—of the heart. Any one employing digitalis is to a certain extent using a two-edged sword. He should therefore have a clear idea of the action and of the side-effects of the drug.

Dr. T. E. Satterthwaite, New York: In cardiac deficiency digitalis is our sheet-anchor. Whether or not its administration is to be continued uninterruptedly must depend on the conditions present. By employing digitalis we avoid the disagreeable gastric effects of the crude drug, and for years I have relied almost exclusively on this, only occasionally giving a little strophanthus and nitroglycerin.

Dr. R. D. Rudolf, Toronto: Mackenzie is accustomed to wait for the breaking down of compensation before resorting to the use of digitalis, but I think it is a much better plan to begin the digitalis as soon as possible after the discovery of evidences of threatened decompensation. In this way the more serious condition may often be averted.

Some Problems in Genetics

Dr. Thomas E. Satterthwaite, New York: While human eugenics is still imperfectly understood, there are certain principles bearing on the transmission of traits by propagation which are tolerably well established. These principles should be popularized, so that the adult portion of society will realize the importance of fit and the dangers of unfit matings. With an aroused public appreciation of these matters, appropriate legislation would sooner or later follow, and be made effective. Uniform laws as to the regulation of marriage, as well as laws to prevent the transmission of diseases by diseased persons, should be urged in every state. Legislators should advocate only such laws as will accomplish satisfactory results without an unreasonable curtailment of personal liberty. There is urgent need of further researches in the field of eugenics, in order to clear up misapprehensions and so allay criticism as to its civic value; but, as this work would necessarily involve the services of special medical experts, the expenditure of large sums of money, and unusual facilities, it should be relegated to the states or the general government, which could provide the men, money and opportunities and accomplish the most at the least expense. Reports from such sources would serve admirably for the bases for the framing of appropriate laws, or for the amendment of those which have proved unsatisfactory.

DISCUSSION

Dr. Edward D. Fisher, New York: I question the correctness of the mendelian theory, and we do not know enough to pass intelligently on many of the legal measures which have been proposed; while if such laws were enacted it would not be possible to carry them out as would be desired. We could not get sterilization applied in New York. Practically, it would be very difficult to decide who should and who should not be sterilized. In this question of genetics there will always be two parties, the believers in heredity and the believers in environment.

Dr. C. E. Woodruff, New York: I believe that environment, not heredity, is the principal element to be considered. If the criminal had been subjected to good influences, he would have been an orderly member of society. I have an idea that it is the "good" families which are sending the most persons to prison. As to the sterilization of those who are known to be liable to transmit imbecility, etc., I am convinced that it is a social necessity.

Dr. R. W. Wilcox, New York: There is one class of persons, the feeble-minded, which has not been fairly treated. It is rightly held that these unfortunates ought to receive the same care as the insane and the imbecile; yet it is a fact that in New York State only 4,000 out of the 19,000 in the state, are now under custodial care.

Diagnosis and Treatment of Disease of the Cecum

Dr. G. Reese Satterlee, New York: Many cases of dilated residual cecum and intestinal stasis give symptoms resembling ulcer or adhesions of the duodenum, ulcer of the stomach, pyloric stenosis and gall stones. Pain from lesions in the region of the cecum is often referred to the stomach, and vice versa. This close relationship is illustrated by the frequency of stasis in the stomach with dilated residual cecum, without any gastric, duodenal or gall-bladder disease. Careful investigation will often show the typical signs of cecal disease, a ballooned, tender cecum with thickened walls, and evidences of intestinal stasis. A thorough roentgenoscopy is necessary in every case. Roentgenograms with bismuth injection of the colon should be employed to prove apparent lesions in the cecum or colon. Constant tenderness over a large area to the left, with persistent constipation, indicates cecal disease, rather than appendicitis, which is usually characterized by distinct attacks of pain, nausea and vomiting. The medical treatment of the ptosed, dilated and sluggish cecum consists in the use of abdominal supports, elevation of the foot of the bed, and massage and vibration, with diet and hygiene and occasional colonic irrigations and castor oil. Russian mineral oil, taken regularly, has given excellent results. The free drinking of water is encouraged, and milk fermented by lactic acid bacilli is a valuable aid. Autogenous colon vaccines will relieve the autotoxemia and sometimes move the bowels. Among surgical procedures which may be used is suspension of the transverse colon, which elevates the cecum. In conditions apparently leading to obstruction, short-circuiting, colostomy or even ileostomy or colectomy may be indicated. Plication of the cecum, with suspension of the cecum and, when indicated, of the sigmoid, has been successfully employed. Diverticula and malignant or tuberculous growth should, of course, be removed.

The Medical Treatment of Intestinal Stasis

Dr. R. W. Wilcox, New York: From the point of view of the physician the causes of this condition, which can be remedied, against which he must direct his efforts, resolve themselves into four categories: (1) insufficient peristaltic action of the intestinal wall; (2) errors in diet; (3) dryness of the intestinal contents resulting from deficient secretion of the intestinal fluids, especially bile, and (4) weakness of the abdominal muscles due to overstretching from various causes. Partial stenosis of the bowel caused from within or without by the pressure of displaced organs, abdominal effusions and peritoneal bands or adhesions interfering with the normal passage of fecal matter belong, undoubtedly, to the surgeon.

DISCUSSION

Dr. O. T. Osborne, New Haven, Conn.: Among the students at Yale I see an increasingly large number of patients suffering from the early stages of appendicitis or of inflammation in the region of the appendix. I have wondered whether these cases were due to athletics or to conditions incident to the students' being obliged to be in chapel every morning at 8:10. Their hasty breakfasts usually consist largely of oatmeal, eaten with sugar and cream or milk, and they have no time to go to stool afterward. Chronic constipation develops, and this, no doubt, is the cause of the attacks which I have observed.

Dr. E. Zueblin, Baltimore: In chronic constipation, simple medical treatment is often not sufficient, and I have found that vaccines may be of great service.

Dr. W. W. Babcock, Philadelphia: It is a fact that many of these cases which cannot be relieved by mechanical support, internal treatment, etc., may be favorably affected by vaccines. There are cases of old colon affections in which recovery occurs when treatment with antityphoid vaccine is given.

Dr. C. E. Woodruff, New York: Dr. Satterlee's paper has shown the admirable results accomplished by vaccines. At the same time, we should bear in mind that they may do much harm. During the past two years my attention has been drawn to quite a number of cases of tuberculosis and other serious disease following antityphoid vaccination. At the same time I would not discourage the judicious use of vaccines, for the good results from them are sometimes wonderful.

Dr. G. R. Satterlee, New York: I believe that Lane is right in attributing ulcer and cancer largely to intestinal stasis, and that if we could eliminate intestinal conditions we would have a much smaller number of these affections to deal with. These stasis cases may be divided into two classes: those with enteroptosis and those without, and the Roentgen ray is a very valuable aid to diagnosis.

Dr. A. E. Gallant, New York: If a person uses bran regularly as an article of diet, he will not have any trouble from Lane's kink. For the best results it is necessary to employ an absolutely pure brand, one sterilized by a temperature sufficiently high to destroy any fungi.

Dr. T. F. Reilly, New York: There is a bread to be had which is composed largely of flaxseed and crushed cereals and which has the same effect as bran.

Dr. L. F. Bishop, New York: It seems to me that in all the discussions on intestinal stasis I have heard too much stress laid on the mechanical factors; as though the intestinal tract were an inanimate tube. The intestine, by its peristaltic action, passes over the material in the tube, and what we are dealing with in this condition is often not so much a physical obstruction as a matter of mobility.

Dr. R. T. Morris, New York: These patients are mostly neurotics. I have cured an extremely severe case of asthma by means of short-circuiting.

The Use of Horse-Serum for the Prevention of Hemorrhage in Nose and Throat Operations

Dr. C. F. Thiesen, Albany: The serum was used before operating, when it was expected that there would be an unusual loss of blood. The injections were given when, from a history of cases of severe hemorrhage in the patient's family, or of severe spontaneous hemorrhage in the patient himself, such a result was to be anticipated. In the eight cases of my series the average coagulation time before injection of the serum was 5.18 minutes, and after injection, 4.12 minutes, making an average decrease in coagulation time of 1.06 minutes. The much talked-of danger of anaphylaxis is practically nil when, as in my cases, only one injection of serum has to be made.

DISCUSSION

Dr. O. T. Osborne, New Haven, Conn.: Before using diphtheria antitoxin we should try to find out whether or not the patient is susceptible to horse emanations and the like.

Dr. R. D. Rudolf, Toronto: I have tried a great many agents for controlling hemorrhage, and I believe that Nature's coagulation is brought about more effectively by Nature's hemorrhage than by anything else. During the past winter I have had two cases illustrating this. One was of thoracic aneurysm, and the other of abdominal aneurysm, and in the latter instance the patient was bled three times for the control of successive hemorrhages.

The Action of Pituitary Extract on Acute Heart Failure and Uncompensated Heart Lesions

Dr. E. Zueblin, New York: Impressed by the marked physiologic action of pituitary extract on muscular fibers, striated and unstriated; and by the valuable results from it in obstetric and gynecologic practice, I undertook a clinical study, especially in cases in which, with a failing heart, immediate action became necessary. From my observation in a series of six cases it would seem (although two of them terminated fatally) that pituitary extract is applicable in desperate cases.

DISCUSSION

Dr. R. D. Rudolf, Toronto: I am convinced that pituitary extract and epinephrin exhaust the reserve power of the heart. In acute conditions there is plenty of reserve to draw on, but such is not the case in terminal conditions, and such agents may kill very promptly. Therefore, I believe that they should be used only in emergencies and when there is an abundance of reserve power.

Dr. O. T. Osborne, New Haven, Conn.: I have used pituitary extract frequently in the past two years, and have found it a very valuable agent. I have never seen it do any harm.

Auricular Fibrillation: Its Diagnosis and Treatment

Dr. William Kirk, Troy, N. Y.: The question has been raised as to whether or not the ventricular form of venous pulse can be recognized by the unaided senses. I believe that it can in the majority of instances. In early and compensated cases, however, the pulsation can rarely be recognized, and it is necessary to resort to the graphic method. The general practitioner, unfamiliar with the instruments of precision used in the graphic method, may recognize the presence of auricular fibrillation, ordinarily, from a persistent irregular pulse, the rate of which is at or above 120 (which will be almost positive evidence for the diagnosis), and the occurrence of a deficit between the rate of the apex and the radical pulse—a characteristic encountered in practically every untreated case. In the treatment the first consideration is the removal of the exciting cause, such as overwork or digestive trouble. Digitalis acts as a specific in a very large proportion of cases. The choice of a preparation is largely a matter of taste, provided that the one used is known to be effective. I have been accustomed to employ a standardized tincture or fluid extract, or the fresh infusion of the green leaves. When the pulse has been reduced to 60 or 70, and the apex-beat coincides with the radical pulse, it is wise to discontinue the digitalis for a time and then begin again with smaller doses, or else to continue with smaller doses.

DISCUSSION

Dr. G. R. Satterthwaite, New York: Auricular fibrillation is not an uncommon condition. I agree that generally it can be recognized. The graphic method shows it absolutely. This method has restored the sphygmograph to use, as it shows the difference between the cardiac and the radical pulse. As to the prognosis, the patient is kept in just the position in which the physician holds him. Patients are apt to get tired of the treatment. They intermit their medicine, and then they go off suddenly.

Dr. L. F. Bishop, New York: As regards polygraphic tracings, the curve has nothing to do with a mathematical curve; whatever its particular shape, it serves for diagnosis. It is simply a record of something which is taking place, and the essential part of it is the beginning of the up-stroke. Taking careful note of this, we may disregard the respiratory curve, the shape of the curve, and everything else.

Dr. W. R. Wilcox, New York: The preparation of digitalis which best shows the action of the drug, as originally described by Withering, is the infusion. The chemistry of digitalis is extremely obscure. I have made over 20,000 tracings with the sphygmograph. I have also made a special study of the six drugs of the digitalis group. There is in digitalis a substance which is centrally emetic, though its glucosids cause less gastric irritation than the infusion. A practitioner, I think, will obtain the best results from the preparation of digitalis about which he knows the most.

Dr. Stewart: In digitalis there are at least four glucosids, as well as some other principles concerning which at present we know nothing. I think that the glucosid digitalin ought to be standardized.

Dr. T. F. Reilly, New York: Sometimes digitalis seems to fail, and we have another drug, apocynum, which may then prove of service. The eclectics call it the "cardiac trocar." It is very irritative to the stomach, but does not act satisfactorily when given by the rectum.

Dr. W. Kirk, Troy, N. Y.: Ordinarily I have used the tincture and also the infusion of digitalis. As to the glucosids not causing gastric disturbance, it has been shown that some emetic effect must be produced by every preparation of digitalis representing its pharmacologic properties, by reason of the central action of the drug. I believe that the fat-free preparations will produce more or less gastric irritation on account of their central effects. I have employed apocynum with very good results when the patient has not had emesis.

Dr. R. W. Wilcox, New York: It certainly has been conclusively shown that digitalis and its preparations have a central emetic action. The amount of the gastric irritation caused is a matter of degree, and less nausea results from the free-fat preparation than from the others.

Current Medical Literature

AMERICAN

Titles marked with an asterisk (*) are abstracted below.

American Journal of Orthopedic Surgery, Philadelphia

April, XI, No. 4, pp. 541-735

1 Congenital Luxation of Hip. P. Le Damany, France.
2 Causes and Treatment of Scoliosis. Z. B. Adams, Boston.
3 Treatment of Scoliosis. A. Schanz, Dresden.
4 *Club-Foot. A. Ehrenfried, Boston.
5 *Pseudoarthrosis Produced by Interposing Sheet Silk and Bayberry Wax. R. O. Meisenbach, Buffalo.
6 Diagnosis of Traumatic Periostitis of Lumbosacral Spine. C. E. Coon, Syracuse, N. Y.
7 Spontaneous Luxation of Hip-Joint as Sequel of Typhoid. Report of Three Cases. C. M. Jacobs, Chicago.

4. **Club-Foot.**—Checking up cases Ehrenfried found that equinovarus occurs three times as often as all other types of club-foot. The next most common form is potential calcaneovalgus. Other types are rare. Males are affected two to three times as often as females; the percentage of males is higher in equinovarus than in other forms. More than half the cases are double; the percentage is lower in equinovarus than in the other forms. Of the single cases, more than half are right sided. Five per cent. of all cases show heredity; of these all are equinovarus, usually double. Club-foot occurs three times as often in twins as in single pregnancies. More than a third of all cases occur in first born; the percentage is lower in equinovarus than in the other forms. Labor is difficult in approximately one-fourth of all cases. Three per cent. are premature. Three per cent. are known to be illegitimate. Other congenital deformities occur in about one-fifth of all cases.

5. Abstracted in The Journal, June 7, p. 1817

American Journal of Physiology, Boston

June, XXXIV, No. 3, pp. 263-351

8 *Parathyroid Deficiency and Sympathetic Irritability. R. G. Hoskins and H. Wheelon, Chicago.
9 Content of Sugar in Blood under Common Laboratory Conditions. E. L. Scott, New York.
10 Effect of Calcium and Protein Fed Pregnant Swine on Size, Vigor, Bone, Coat and Condition of Offspring. J. M. Evvard, A. W. Dox and S. C. Guernsey, Iowa City, Ia.
11 *Influence of Epinephrin on Respiration. L. B. Nice, J. L. Rock, and R. O. Courtright, Oklahoma, Okla.
12 *Factors Affecting Coagulation Time of Blood. V. Effects of Hemorrhage Before and After Exclusion of Abdominal Circulation, Adrenals or Intestines. H. Gray and L. K. Lunt, Boston.

8. **Parathyroid Deficiency and Sympathetic Irritability.**—Hoskins and Wheelon found that parathyroid destruction in dogs results in a marked increase of vasomotor irritability as shown by the reactions to nicotin, epinephrin and pituitrin. All components of the vasomotor mechanism, sympathetic cells, myoneural junctions and musculature, seem to be affected. The effects are of varying degree in different cases. There was observed no strict parallelism between the external symptoms of parathyroid deficiency and the degree of vasomotor irritability. Inconclusive evidence indicates that calcium injections in some measure restore vasomotor irritability toward normal. The sympathetic system offers no exception to the general increase of irritability that results from parathyroid extirpation.

11. **Influence of Epinephrin on Respiration.**—The effect of epinephrin on respiration it was found occurs synchronously with that on the circulartory system. Doses of epinephrin which cause a fall in blood-pressure elicit an increase in the depth of respiration. This increase may or may not be preceded by a shallowness. Within limits, doses of epinephrin which produce a rise in blood-pressure cause an increase in the depth of respiration. This increase, again, may or may not be preceded by a shallowness. The increase is proportional to the rise in blood-pressure and to the amount of epinephrin given. Excessive doses produce a marked shallowness in breathing. Within limits, the shallowness is proportional to the effects on blood-pressure and to the amount of epinephrin given.

12. **Factors Affecting Coagulation Time of Blood.**—Gray and Lunt summarize their results as follows: Hemorrhage decreases clotting time, especially if moderately severe, 13 per cent. The most important coagulating factors may be localized in the abdomen, because: (1) exclusion of the abdominal circulation increases clotting time, and (2) hemorrhage after exclusion no longer stimulates a decrease of clotting time. The adrenal glands probably favor by their secretion rapid clotting after hemorrhage, but after adrenalectomy hemorrhage still decreases the clotting time. Exclusion of the intestines usually increases clotting time, but after this exclusion hemorrhage can still decrease the clotting time. The important rôle which the liver has been proved to play in coagulation indicates that it provides, perhaps in cooperation with the intestines and the adrenal glands, the necessary elements to hasten clotting after extensive bleeding.

Annals of Otology, Rhinology and Laryngology, St. Louis

March, XXIII, No. 1, pp. 1-272

13 Acute Thyroiditis as Complication of Acute Tonsillitis. C. F. Theisen, Albany, N. Y.
14 Diagnosis of Endocranial Complications of Suppurative Labyrinthitis. A. Braun and I. Friesner, New York.
15 Results of Seven Cases Operated on by Mr. Heath. E. M. Plummer, H. P. Mosher, Boston.
16 Bronchoscopic Treatment of Spasmodic Asthma. G. F. Keiper, Lafayette, Ind.
17 Vacuum Diseases of Maxillary Sinus. R. C. Lynch, New Orleans.
18 Indication for Labyrinth Operation, Report of Eight Operations and Six Cases in Which No Operation was Performed. C. F. Welty, San Francisco.
19 When Radical Mastoid Is Imperative. J. C. Sharp, New York.
20 New Esophagoscope. R. Lewisohn, New York.
21 Case of Cerebellar Abscess with Atypical Symptoms—Recovery. A. Dighton, Liverpool.
22 Bronchial Asthma and Relation of Nasal Conditions to It. W. J. Abbott, Cleveland.
23 Case of Recurring Laryngeal Polypi with Tetany. R. B. Canfield, Ann Arbor, Mich.
24 Adenocarcinoma of Nose: Chronologic Review and Case Report. L. D. Alexander, New York.
25 Semicircular Canals and Function of Equilibrium. G. E. Shambaugh, Chicago.
26 Syphilis of Ear. O. J. Stein, Chicago.
27 Esophagoscopy. S. A. Friedberg, Chicago.
28 Epipharynx in Children. E. M. Holmes, Boston.
29 Fistula Symptom in Non-Suppurative Diseases of Ear. O. Beck, Vienna.
30 Case of Probable Injury to Jugular Bulb Following Myringotomy in an Infant Ten Months Old. J. R. Page, New York.
31 Countercoup Fracture of Skull. T. R. Chambers, Jersey City.
32 Cancer of Larynx with Special Reference to Radium Therapy. J. C. Beck, Chicago.
33 Etiology of Nasal Hydrorrhea. Case Reports. H. Kahn, Chicago.

Archives of Internal Medicine, Chicago

June, XIII, No. 6, pp. 841-988

34 *Value of Hexamethylenamin as an Internal Antiseptic in Other Fluids of Body than Urine. F. Hinman, Baltimore.
35 *Hexamethylenamin. H. McGuigan and C. L. v. Hess, Chicago.
36 *Relations of Brain and of Olfactory Apparatus to Processes of Immunity. H. Sewall, Denver.
37 *Metabolism in Dementia Praecox. E. L. Ross, Hospital.
38 Titration of Wassermann Reagents. L. Thompson, Little Rock, Ark.
39 *Attempts to Produce Scarlatina in Monkeys. C. Krumwiede, Jr., M. Nicoll, Jr., and J. S. Pratt, New York.
40 *German Measles (Rubella); An Experimental Study. A. F. Hess, New York.
41 Differential Diagnosis of Intestinal Entamebas of Man. C. F. Craig, Fort Leavenworth, Kan.
42 Immediate Effect of Repeated Doses of Theobromin Sodium Salicylate and Theocin on Renal Function in Acute Experimental Nephritis. R. Fitz, Boston.
43 *Three Cases of Adams-Stokes Syndrome with Histologic Findings. A. Oppenheimer and B. S. Oppenheimer, New York.
44 *Intrameningeal Treatment of Tabes and Cerebrospinal Syphilis. T. R. Boggs and R. R. Snowden, Baltimore.
45 *Twenty-Three Cases of Pneumonia Treated with Antipneumococcus Serum. W. R. Williams, New York.

34. **Value of Hexamethylenamin as an Internal Antiseptic.**—Hexamethylenamin is dependent on the liberation of formaldehyd for its antiseptic value. It is not converted into formaldehyd in any of the normal alkaline fluids of the body; therefore, Hinmann claims it can be of no prophylactic value in any of these fluids. After some infections of these fluids there may be under certain conditions a change in reaction sufficient to produce slight liberation of formaldehyd, but it was not possible to show that there would be enough to give antisepsis. In localized infections of pronounced acidity, hexamethylenamin is not taken into them from the circulation in amounts to furnish formaldehyd in antiseptic strength (the gall-bladder, possibly, excepted). The therapeutic use of hexamethylenamin as an internal antiseptic is justified, experimentally, for urinary conditions alone, and then only when it is excreted into an acid urine.

35. **Hexamethylenamin.**—Since, after the administration of hexamethylenamin, free formaldehyd appears only in the gastric juice and acid urine, and not in other secretions or in the blood, even with dialyzing tests, the authors hold that the liberation results from the acid reaction only and not from cell action. Even if it were liberated in other locations it would probably exert no beneficial action because of its reconversion or rapid oxidation into injurious products. Combined formaldehyd as hexamethylenamin, does not decompose readily until an acid medium is reached, when the action is that of weak formaldehyd. The only apparent indication for the internal administration of the drug, therefore, is in infections of the urinary tract.

36. **Relations of Brain and Olfactory Apparatus to Immunity.**—Summarized, Sewall's conclusions are the following: Guinea-pigs sensitized to horse-serum may be desensitized by residence in a horse-stable. It is probable that this reaction may be rapidly achieved through the olfactory sense or more slowly by absorption through the respiratory mucous membrane. The period of antianaphylaxis is of less than two days' duration. The converse of this, sensitization of normal guinea-pigs in stable air, Sewall has not been able to achieve. Removal of part of the brain of a sensitized guinea-pig produces much more severe shock than the same amount of injury in a normal animal. This shock is apt to be followed by a period of antianaphylaxis of short duration. Section of the olfactory nerves within the cranial cavity preceding the brain operation by a day or more abolishes the tendency to shock. Such nerve section in the normal animal also seems to reduce the shock arising from definite brain injury. Depression of the olfactory sense may be produced through cocain and the symptoms of poisoning with this drug resemble those of anaphylaxis. The body as a whole may be sensitized through the peripheral application of horse-serum after a definite latent period. The time required to sensitize the peripheral epithelium has not been found to be materially altered by previous general sensitization. A normal animal sensitized by local treatment may resist large intravenous injections of serum repeated at intervals of two weeks. Sensitization of one area of the respiratory epithelium involves sensitization of the rest, though the local signs of expression are different. The evidence indicates that local anaphylaxis, induced through the periphery, precedes the development of general sensitization. Tuberculous guinea-pigs were made worse when treated by instillations or sprays of old tuberculin.

37. **Metabolism in Dementia Praecox.**—Five cases of dementia praecox, three of them in a chronic and two in subsiding acute phase of the disease, were used by Ross in the metabolism tests. Over a period of from four to eight days the exact income and outgo of total nitrogen, different forms of nitrogen, total sulphur, different forms of sulphur, phosphorus, calcium and magnesium were determined. The metabolism of total nitrogen was found to be within the limits of normal with the possible exception of one case. The urea nitrogen of the urine was variable but remained normal. The ammonia nitrogen of the urine varied within the limits found in normal cases. In the acute cases a tendency was exhibited to excrete more of this form of nitrogen than in the other class of patients.

The amounts of creatinin and uric acid nitrogen obained in these cases of dementia praecox coincide with the normal. The metabolism of total sulphur is considered normal, with the acute cases showing a greater sulphur excretion, both in urine and feces, than the other class of patients. The total sulphate-sulphur output, according to the data on normal cases cited by authorities, was below normal. The inorganic sulphate-sulphur of the urine, according to data on normal subjects, was below normal in absolute quantities in both classes of patients, and lowest in the case of the acute class. The amounts of this form of sulphur expressed in percentage of the total urinary sulphur, were about normal for the chronic class but below normal for the acute group. The urinary neutral sulphur was practically normal for the chronic cases, but much above normal in the subsiding acute cases. The ethereal sulphate findings were negative.

As to the meaning of these positive findings on the sulphur metabolism there is little question in Ross' mind. In the chronic cases there was normal total sulphur, practically normal neutral sulphur, below normal total sulphate and possibly below normal inorganic sulphate. In the acute cases there is a normal, but a maximum normal, excretion of total sulphur, subnormal total sulphate, subnormal inorganic sulphate and supernormal neutral sulphur. Therefore it must be concluded from the sulphur data that in the acute cases the patients had lost to a certain degree their normal powers of oxidation. Also this is suggested in the patients in the chronic class by the subnormal sulphate output. The findings with regard to phosphorus, calcium and magnesium were negative.

39. **Attempts to Produce Scarlatina in Monkeys.**—The attempt to produce scarlet fever in monkeys and baboons by the faucial inoculation of streptococcus cultures or unfiltered exudates and discharges from scarlet-fever cases, as well as the intraperitoneal injections of filtrates of such exudates and discharges and of large quantities of blood, gave negative results.

40. **German Measles.**—Hess' investigation included a bacteriologic study of the blood, inoculations of blood into monkeys with the object of producing the disease, and a cellular examination of the blood during the period of incubation of the disease. In four instances the blood was obtained for bacteriologic examination. In three of the cases the rash had been present for less than twenty-four hours, and in the fourth for about thirty-six hours; in two the temperature of the child was above the average, between 102 and 103 F. Four *Macacus rhesus* monkeys were inoculated with blood obtained from four different cases. In no case did the rash develop. In only one instance was there a rise in temperature, following a considerable period of incubation. In the others there was no such rise.

Blood examination showed that in almost all cases there was a definite increase in the lymphocytes even preceding the appearance of the exanthem. It would seem to Hess that this premonitory lymphocytosis might be of value to institutions in heralding the fact that infection has taken place, and in facilitating the segregation of infected from non-infected children, and thus, perhaps, in limiting the spread of an epidemic. That there is a lymphocytosis at the time of the appearance of the rash may also serve to differentiate rubella from scarlet fever, a disease with which it is sometime confounded, but which is associated with an increase of polynuclear cells in its early stage.

43. **Adams-Stokes Syndrome.**—The hearts of three patients with Adams-Stokes syndrome examined by the Oppenheimers presented, the first a calcific mass in the region of the auriculoventricular bundle, the second no gross lesion across the conducting system to account for the symptoms, the third infarction of the ventricular septum. The first patient is reported to have denied a syphilitic history, in the second case the past history is not given, and the third patient is said to have had no lues. All three were well along in years with some sclerosis of the vessels and some increase of cells in the interstitial tissues. The most noteworthy lesions in each case were: in the first, an absolute break in the course of the stem of the auriculoventricular system; in the second, the slight auriculonodal junction and a sclerosis of the sinuauricular node; in the third, an infected infarct of the ordinary ventricular musculature near the junctional tissue. The possibility of insufficient circulation and of a lesion in the ordinary ventricular musculature as agents in the production of heart-block, are suggested.

44. **Intrameningeal Treatment of Tabes and Syphilis.**—From the report of 8 cases by Boggs and Snowden it is evident that the intraspinal method is a step forward in the treatment of tabes and cerebrospinal syphilis. The patients were uniformly relieved from pain, and as far as locomotion is concerned there was a slow but definite improvement, in some instances amounting almost to restitution to normal. The psychic effect of the treatment was also marked. The patients became encouraged by the quick relief of pain and the first improvements in the control of motion and were faithful in their efforts to use the legs and practice walking, stair climbing, etc. The nutrition also rapidly improved under these stimuli. The effect of the treatment on the cerebrospinal fluid was very striking. The cell-count first fell to normal, the Wassermann reaction becoming negative some time after the cells were reduced.

45. **Pneumonia Treated with Antipneumococcus Serum.**—The serum used by Williams was taken from a horse immunized against many strains of pneumococci. Usually it was injected directly into a vein of the arm at a temperature about that of the patient. This rule was departed from and the serum was given subcutaneously to two children on account of the difficulty of entering the vein with the needle, and also when second and later doses were given to four adult patients who had received the initial dose intravenously. The first doses for adults in the earlier cases was 100 c.c. This was increased later until, in one instance, an initial dose of 300 c.c. was given. Many of the patients received more than one dose so that the total amount of serum that an individual received ranged from 50 to 750 c.c. This maximal quantity was given in six doses spread over a period of five days.

A complete demonstration of the nature of the infecting organism was not essayed. Blood-cultures, however, were made in eleven cases. Only one of them showed the pneumococcus, the others being negative. The series included twenty-three cases with sixteen recoveries and seven deaths, a mortality of 30.5 per cent. Of the seven patients who died, three were alcoholics, one of whom had suffered from two previous attacks of pneumonia, and all were very actively delirious. A fourth death was that of a baby, who, in addition to pneumonia, had multiple abscesses of the scalp, double purulent otitis media, and empyema followed by pneumothorax. The remaining three deaths seemed to have been due to the frank intensity of the pneumonia. Of the sixteen patients who recovered, eight had defervescence by crisis and eight by lysis. Five patients had complications. The series offered an opportunity to observe the effects of the administration of large and frequent doses of horse-serum that had not been refined in any manner and that contained no preservative except a trace of chloroform. Usually no immediate effects could be detected and the injection of the serum was tolerated surprisingly well. In five patients, however, symptoms appeared. The effect of the serum on the leukocytes was determined by frequent blood-counts before and after the injections. No constant effects on the white cells could be made out. Late symptoms due to the serum were noticed in eight patients. The symptoms were not usually severe.

Boston Medical and Surgical Journal

July 2, CLXXI, No. 1, pp. 1-48

46 Present Status of Treatment of Laryngeal Tuberculosis in Massachusetts State Sanatoria. A. C. Getschell, Worcester.
47 Frequency of Laryngeal Tuberculosis in Massachusetts. J. B. Hawes, 2d, Boston.
48 Two Hundred and Forty-One Cases of Laryngeal Tuberculosis Treated at Rutland State Sanatorium. J. A. Lyon, Rutland.
49 *Significance of Absence of Trypsin in Stomach in Presence of Icterus. A. E. Austin, Boston.
50 Chorio-Epithelioma. F. W. Johnson, Boston.

49. **Absence of Trypsin in Stomach in Presence of Icterus.**—The absence of trypsin in the presence of icterus according to Austin may mean conjoint cholangitis and pancreatitis,

cholangitis with mere pressure on the outlet of the pancreatic duct, pressure of the enlarged head (carcinomatous) of the pancreas on the common duct, or mere pressure of a growth originating in the ducts on the pylorus. When in conjunction with this fact there is considerable residue in the fasting stomach, it is safe to conclude that there is pyloric narrowing due probably to outside pressure, and when the rare instance of bile without trypsin is found the inference to be drawn is that pancreatitis is primary and icterus secondary, due to pressure on the choledochus.

Iowa State Medical Society Journal, Washington

June, III, No. 12, pp. 801-917

51 Education of Specialist. L. W. Dean, Iowa City.
52 Anaphylaxis. J. Auer, New York.
53 Cancer and Sarcoma of Breast. A. M. Swale, Mason City.
54 Unilateral Tuberculosis of Kidney. E. A. Jenkinson, Sioux City.
55 Osteomyelitis. S. A. Spilman, Ottumwa.
56 Fat-Constipation in Artificially Fed Infant. S. G. Hands, Davenport.
57 Arthritis Deformans. A. Oshana, Mason City.
58 Chorio-Epithelioma. Report of Case. M. Childress, Oskaloosa.
59 Anesthesia from Standpoint of Country Practitioner. J. F. Auner, Waverly.
60 Tuberculin in Treatment of Genito-Urinary Tuberculosis. L. W. Bremerman, Chicago.
61 Some Borderland Neuroses. G. Kessel, Cresco.

Kentucky Medical Journal, Bowling Green

May 15, XII, No. 10, pp. 293-328

62 Tobacco, Its Effect on Longevity. E. S. Frey, Louisville.
63 History of Typhoid Vaccination. P. S. Ganz, Louisville.
64 Surgical Treatment of Certain Acute and Chronic Diseases of Palpebral and Ocular Conjunctiva. M. F. Coomes, Louisville.
65 Acute Rheumatism. A. W. Nickell, Louisville.
66 Periosteal Sarcoma. Report of Case. G. P. Grigsby, Louisville.
67 Abscess of Liver. Report of Case. S. T. Yeatts, Louisville.
68 An Unusual Case of Pregnancy. C. E. Frey, Louisville.
69 Case of Scleroderma Circumscripta. M. L. Ravitch, Louisville.

June 1, No. 11, pp. 329-364

70 Current Medical Events. J. T. Reddick, Paducah.
71 Laboratory Methods General Practitioner Should Use. R. L. Schroeder, Owensboro.
72 Recent Methods in Hospital Anesthesia. C. N. Chipman, Washington, D. C.
73 True Physician. E. E. Bickers, Port Royal.
74 Duties of Anesthetist. E. F. Horine, Louisville.
75 Foreign Body (Steel) in Eye Ball—Method of Removal. J. H. Hester, Louisville.
76 Bronchitis. C. E. Vidt, Russell.
77 Medical Treatment of Appendicitis. A. P. Dowden, Eminence.
78 Incipient Pulmonary Tuberculosis. A. J. Bryson, Fullerton.

Lancet-Clinic, Cincinnati

June 20, CXI, No. 25, pp. 711-736

79 Sex Problems. I. O. Allen, Metamora, Ind.
80 Management of Puerperium; Chapter in Preventive Medicine. G. Gellhorn, St. Louis.
81 Present Status of Goiter. J. Y. Welborn, Evansville, Ind.

June 27, CXI, No. 26, pp. 737-764

82 Sex Problems. I. O. Allen, Metamora, Ind.
83 Puerperal Eclampsia, with Special Reference to Prevention. W. D. Porter, Cincinnati.
84 Cerebellar Surgery. S. P. Kramer, Cincinnati.

Medical Record, New York

July 4, LXXXVI, No. 1, pp. 1-48

85 Laboratory Aids in Diagnosis of Acute Mastoid Disease Due to Acute Purulent Otitis Media. G. Bacon, New York.
86 Sources of Error in Diagnosis of Pulmonary Tuberculosis. M. M. Fishberg, New York.
87 Psychologic Aspects of Relation to Divorce, Accidents, Crime, etc., Mental Defects. S. Block, Brooklyn.
88 *Cause and Prevention of Pyorrhea Alveolaris and Furunculosis. F. Tweddell, Summit, N. J.
89 Arterial Hypertension: Its Relation to Arteriosclerosis and Bright's Disease. W. C. K. Berlin, Denver.
90 Wound Healing with Aid of Vaccines. J. Gardiner, Toledo, O.

88. **Prevention of Pyorrhea Alveolaris and Furunculosis.**—Using from 30 to 60 drops of sulphuric acid, diluted in 2 to 3 ounces of water, three or four times a day, the mouth to be well rinsed immediately after, Tweddell found that the effect on boils and carbuncles in every case was astonishing, the astringent action being wonderful. Within twenty-four hours marked changes for the better were noted. Small doses are of no use, and if there is no improvement after forty-eight hours, the dose should be increased. Improvement is so rapid that it is seldom necessary to continue treatment for more than eight or ten days, usually less. The patient in most cases can himself decide when to discontinue treatment. No gastric or other symptoms were ever noticed as a result of taking this drug.

Modern Hospital, St. Louis

June, II, No. 6, pp. 331-392

91 Robert W. Long Hospital of Indianapolis. C. P. Emerson, Indianapolis.
92 Woman's Auxiliary as an Aid to Hospital Service. D. W. Graham, Chicago.
93 School at Massillon State Hospital. M. Z. Linden, Massillon, O.
94 Purchase, Preparation, and Distribution of Drugs and Medical Supplies. R. Norton, Baltimore.
95 United States Hospital Ship for Deep-Sea Fisherman. T. W. Salmon, New York.
96 Special Building for Domestic Employees. W. L. Babcock, Detroit, Mich.
97 Purchasing and Dispensing of Hospital Supplies and Drugs. E. A. Greener, Muskegon, Mich.
98 First Aid Hospitals for Industrial Plants. P. R. MacNeille, New York.
99 Items in Hospital Efficiency—Physical Therapy. J. A. Hornsby, Chicago.

New York Medical Journal

July 4; C, No. 1, pp. 1-60

100 *Treatment of Obesity. J. M. Anders, Philadelphia.
101 Treatment of Amebic Dysentery with Emetin. J. Friedenwald and L. J. Rosenthal, Baltimore.
102 Radium in Middle Ear Deafness Caused by Chonic Suppuration. W. S. Bryant, New York.
103 *Cardiac Hypochondriacs. R. H. Babcock, Chicago.
104 Control of Pulmonary Tuberculosis. T. J. Mays, Philadelphia.
105 *Sensible Diet for Average Man and Woman. E. L. Fisk, New York.
106 Cutanea Lues Insolita. W. P. Cunningham, New York.
107 Effects of Narcotic Drug Addiction. F. Kennedy, New York.
108 Commissioned Veterinary Corps for Army. G. Steele, Chicago.
109 Circumtonsillar Abscess. D. Nathan, Norristown, Pa.

100. **Treatment of Obesity.**—In the majority of cases, Anders states, obesity may be regarded as a symptom rather than a pathologic entity, being dependent on a variety of underlying affections, as previously shown, and successful treatment demands the removal of these causative states. The problem of determining the cause in special cases is an intricate one, sometimes impossible of solution because there is no sure method of getting at the facts, but in such instances time, combined with patient and painstaking observation, may reveal the dominant etiologic factors. Prophylactic measures in persons predisposed to corpulency are to be advised and encouraged. If a hereditary disposition to corpulency exists, the fat-forming (farinaceous) substances must be restricted in the dietary during childhood and adolescence. The normal amount of fat and protein, however, may be allowed in young persons who take an average amount of muscular exercise. If anemia is present, a suitable form of iron should be prescribed. During middle life a tendency toward corpulency is frequently observed, when prophylaxis must have reference to the causative factors presented by individual cases. If imprudences in eating and drinking are the besetting sins, these must be corrected. If the occupation is a sedentary one or if the individual is indolent, loving rest, and phlegmatic, then an effort to overcome physical torpor by means of suitable forms of muscular activity must be made. If a gouty or rheumatic disposition obtains, measures preventive of these conditions must be instituted.

103. **Cardiac Hypochondriacs.** — However neurotic or impressionable the cardiac hypochondriac may be, Babcock claims, the foundation of his fear was laid, not in the primary attack of palpitation or precordial pain *per se*, but in the behavior of the physician or friend who suggested the likelihood of a serious heart disorder. The doctor on being hurriedly summoned finds the individual perchance pale, with cold hands and feet, a rapid, feeble pulse and without pausing to examine the heart or ascertain the previous history, at once hastens to administer a hypodermic injection of strychnin, nitroglycerin, or morphin. He very likely shows by his face or even by some indiscret remark, that he thinks the patient in collapse and therefore in grave danger. This attitude on the part of the physician is due to the fact that he is domi-

nated by the sufferer's symptoms without stopping to consider their pathologic significance. He has been called to afford relief from what is regarded by the patient or family as a dangerous condition, and he does right to administer a hypodermic injection of morphin or strychnin at once. Nevertheless he should be on his guard not to betray by look or act any apprehension on his part as to the outcome.

In a majority of cases the subcutaneous injection of an eighth of a grain of morphin together with a two hundredth of atropin will promptly arrest the attack and reassure the patient; but an injudicious exclamation or expression as to the danger of the patient, may not only tend to counteract the effect of the remedy, but is likely to fix in the patient's mind the idea that a subsequent attack may prove fatal before help can be obtained. A reassuring word and manner often will of themselves do much to calm the individual and mitigate the severity of the symptoms. At all events it can do no good for the doctor to manifest apprehension, and besides it is likely to impair his judgment.

Very many physicians seem to view all cases of disordered heart action purely from the standpoint of the organ itself, without considering the extraneous factors serving to disturb the cardiac function. In this respect they are like those inexperienced practitioners who prescribe digitalis or some allied remedy whenever they detect a heart murmur, without pausing to consider whether or not the symptoms complained of are due to decompensation. It is this injudicious procedure on the part of the practitioner that is often responsible for the fact that many a victim of organic heart disease becomes a veritable hypochondriac in attributing to his cardiac lesion every sort of sensation or preversion of function of other organs.

It is just this unwise or overzealous behavior on the part of the general practitioner that strengthens the hands of the so-called Christian Scientist. The cardiac hypochondriac, whether having only a functional disturbance of circulation or a veritable cardiopathy is likely to be benefited by the consoling ministrations of the Christian Science healer, and Babcock states, practitioners of medicine would do well to imitate the example of these non-medical healers.

105. **Sensible Diet.**—To keep warm and give energy for work, Fisk advises to eat energy or fuel foods, potatoes, bread, cereals, corn bread, syrup and other sugars. To keep muscles and organs in repair, eat a limited and fixed amount of repair foods, meat, eggs, cheese, nuts, flesh foods, peas, beans and lentils. Do not increase the repair foods with increase in work or exposure to cold; increase the fuel foods for further energy.

Eat fruit every day. Canned fruits are good. Cooked fruit is often better than dubious fresh fruit, but some fresh fruit is essential. Eat fresh, green vegetables whenever you can get them. Thoroughly wash all raw foods. Eat some bulky vegetables of low food value, like carrots, parsnips, spinach, turnip, squash and cabbage to stimulate the bowels, and give flavor to the diet and prevent overnourishment. Eat slowly and taste your food well and it will slide down at the proper time. Do not nibble your food timorously; eat it boldly and confidently. A glass or two of water at meals is not harmful if you do not wash your food down with it. Do not let anyone bring a grouch to the dinner table; it will upset all the food values.

First, last and all the time, be moderate; avoid overnourishment and overweight. Restrict your fuel foods and burn up your own fat if you are tending toward stoutness.

Old Dominion Journal of Medicine and Surgery, Richmond, Va.

June, XVIII, No. 6, pp. 281-339

110 Types and Symptoms of Goiter and Hyperthyroidism. A. G. Brenizer, Charlotte, N. C.
111 Meniere's Disease. J. M. Hutcheson, Richmond.
112 *Simple Method of Bladder Drainage. E. B. Claybrook, Cumberland, Md.

112. **Method of Bladder Drainage.**—Instead of tapping it is much simpler as far as relief goes, and safer as well, Claybrook says, to use a good trocar instead of the usual needle, and as soon as the stylet is withdrawn, feed a soft-rubber catheter through the sleeve into the bladder, and leave it in place, withdrawing the sleeve carefully over the catheter. A strip of adhesive is then given a turn around the catheter and the two free ends fastened down to the skin. There is absolutely no leakage around the catheter and when it is removed, the sinus heals in two or three days if the urethra is freely open.

Pennsylvania Medical Journal, Athens

June, XVII, No. 9, pp. 687-770

113 Surgical Treatment of Exophthalmic Goiter. D. Guthrie, Sayre.
114 *Fracture of Surgical Neck of Humerus. G. G. Ross, Philadelphia.
115 Gliosarcoma of Retina with Recurrence in Antrum of Highmore. E. Stieren, Pittsburgh.
116 **Modern Diagnosis* of Tuberculosis of Kidney. B. A. Thomas, Philadelphia.
117 *Diagnostic Methods Applicable to Renal and Ureteral Lesions. G. M. Laws, Philadelphia.
118 *Results of Joint Tuberculosis in Series of Two Hundred Cases Which Have Been under Observation for Five or More Years. F. D. Dickson and D. P. Willard, Philadelphia.
119 Brill's Disease. Comparison of Four Cases with Cases of Typhus Fever Treated by Author. A. E. Roussel, Philadelphia.
120 Present Status of Insanity Problem. J. H. W. Rhein, Philadelphia.
121 Investigation of One Hundred Cases of Chorea. A. Newlin, Philadelphia.
122 Unusual Instances of Value of Serum and Vaccine Therapy. J. H. McKee, Philadelphia.

114, 116 and 117. Abstracted in The Journal, Oct. 18, 1913, p. 1484.

118. Abstracted in The Journal, Oct. 25, 1913, p. 1564.

Public Health Journal, Toronto

May, No. 5, pp. 285-358

123 Effect of Water Filtration—Biologic and Chemical. H. W. Cowan, Toronto.
124 Isolation Hospital Planning and Management. T. H. Whitelaw, Alberta.
125 Public Health in Saskatchewan. M. M. Seymour, Regina.
126 War Against Infantile Mortality. J. A. Baudouin, Lachine.
127 Problem of Alcohol. F. B. Gurd, Montreal.
128 Tuberculosis Business Proposition. A. P. Reid, Middleton.
129 Chronicles "En Route." F. Withrow.

June, No. 6, pp. 361-436

130 Transmission of Typhoid. H. W. Hill, London.
131 Sunlight in Cities. T. Brockmann, Regina.
132 Housing Problem. E. W. J. Hague, Winnipeg.
133 Economic and Racial Waste Through Insanitary Homes and Workshops. T. M. Molloy.
134 Town Planning and Its Influence on Public Health. A. L. Favell, North Battleford, Sask.
135 Veterinary Hygiene and Public Health. C. H. Higgins, Ottawa.
136 Chronicles "En Route." F. Withrow.

Surgery, Gynecology and Obstetrics, Chicago

June, XVIII, No. 6, pp. 661-784

137 *Diagnosis and Surgical Technic to Be Employed in Handling Acute Abdominal Conditions. J. Y. Brown, St. Louis.
138 *Calculous Anuria. Report of Two Cases. L. Davis, Boston.
139 Final Results (After Five Years) in One Hundred and Ninety-Two Patients Operated on for Ectopic Pregnancy. R. R. Smith, Grand Rapids, Mich.
140 *Excision of Clavicle and First Rib for Malignant Disease. R. E. Fort, Nashville, Tenn.
141 Original Surgical Uses of Bone-Graft. F. H. Albee, New York.
142 Composite or Fibro-Epithelial Tumors of Lips. W. Martin, New York.
143 *Improved Gilliam Operation for Uterine Displacements. W. Cuthbertson, Chicago.
144 *Educational Value of Cancer Statistics to Insurance Companies, Public and Medical Profession. F. L. Hoffman, Newark, N. J.
145 Death of Full-Term Fetus Due to Constriction of Umbilical Cord by Amniotic Bands: Rupture of Amnion; Hydramnois. E. Cary, Chicago.
146 *Clinical and Experimental Results of Streptococcic Infections with Special Reference to Arthritis and Its Treatment. F. G. Dyas, Chicago.
147 Roentgen Findings in Gastric and Duodenal Ulcer. J. T. Case, Battle Creek, Mich.
148 Treatment of Fractures by Medullary Bone Splints. Report of Two Cases. C. Davison, Chicago.
149 *New Self-Retaining Abdominal Retractor and Wound Protector. U. C. Bates, Seattle, Wash.
150 Present Status of Joint Diseases and Best Method of Treatment. E. G. Beck, Chicago.
151 Roentgen Findings in Normal Stomach. A. Hartung, Chicago.
152 Varicocele Operations. W. Van Hook, Chicago.
153 Clamp Intended to Facilitate Suture Anastomosis of Hollow Viscera. W. Bartlett, St. Louis.

154 Amniotic Membrane for Prevention of Postoperative Peritoneal Adhesions. C. B. Lyman and W. H. Bergtold, Denver.
155 Electric Drill, Saw, Reamer and Trephine in Bone Surgery. C. Geiger, St. Joseph, Mo.
156 Anesthesia in Surgical Research. B. F. McGrath, Rochester, Minn.
157 Pituitrin in Intestinal Paresis Following Abdominal Operations. O. H. Stanley, Concord, N. H.

137. Abstracted in The Journal, Jan. 31, p. 404.

138. **Calculous Anuria.**—Analysis by Davis of cases of calculous anuria recorded in the literature shows that at least in 90 per cent. either only one actively functionating organ existed, which was blocked, or that there was blocking of both kidneys. The few cases reported as examples of reflex inhibition of an unobstructed but more or less diseased kidney, as the result of calculous obstruction of its fellow, Davis states, are to be explained more rationally as the functional failure of an overloaded unsound organ. Convincing post-mortem and histologic evidence of reflex inhibition of a sound kidney, as the result of calculous obstruction of its fellow, is lacking. Convincing clinical and experimental evidence is likewise lacking. From a practical point of view, Davis would consider and treat calculous anuria as a purely mechanical problem. The therapeutic employment of the ureteral catheter he would restrict to a tentative use in mild cases only. He says operation should be resorted to at once in all urgent cases, the indication being to relieve obstruction, pyelotomy when practicable to be preferred to nephrotomy. Removal of the stone is an ideal to be attained whenever possible without undue prolongation of the operation. Bilateral operation is indicated whenever the kidney first cut down on seems inadequate by itself to sustain the work of elimination of the body. It naturally follows from this that the bilateral operation should be performed whenever the kidney first cut down on is apparently found unobstructed.

140. **Excision of Clavicle and First Rib for Malignant Disease.**—Fort is of the opinion that partial excision of the clavicle or first rib should not be practiced for malignant disease. The danger of local or general metastases is very great, and as division of the bone increases this hazard, excision should be made with the bone intact. Because of the favorable results obtained in the few cases of sarcomata of the clavicle and the larger number of sarcomata of the long bones, Fort states, it is advisable to use the mixed toxins of erysipelas and *Bacillus prodigiosus* for two or three months after operation. Under modern aseptic conditions the mortality for excision of the clavicle and excision of the first rib should be comparatively small, and, considering the fate of the patients who are denied surgery, the opportunity of relief by surgery is mandatory.

143. **Modified Gilliam Operation for Uterine Displacements.**—The first step of Cuthbertson's method after the usual preparation of the patient is to make a Pfannenstiel incision from one internal ring to the other, and after loosening the skin upward and downward from the subjacent fascia the abdomen is opened in the median line by as small an incision as possible through which necessary manipulations can be made. All uterine adhesions are broken up, the resulting bare spots are covered over by peritoneum, the uterus replaced in normal position, and the round ligaments on either side caught up by rubber-protected intestinal forceps. After the round ligaments are isolated, a point is selected far enough from the uterus which when the ligament is shortened will hold the uterus in its normal position. In selecting this point the size of the ligaments will have to be taken into consideration —the smaller the ligament, the nearer the uterus is the point to be selected. Through this point a catgut guy suture is passed and the round ligaments drawn through the anterior abdominal wall as in the Gilliam operation. The next step is adapted from the operation of L. L. McArthur where he uses a live aponeurotic suture in the radical cure of hernia.

The aponeurosis of the external oblique is seized with a snub-nosed forceps and with a scalpel, a strip of the aponeurosis is peeled up from just above Poupart's ligament to a point about 2 cm. above where the round ligament emerges from the muscle. Next, a sharp-pointed pair of Kocher's forceps is pushed through between the two arms of the ligament and, catching the aponeurotic strip, it is drawn down into place again and stitched there with a continuous catgut suture. Interrupted catgut sutures are placed through the round ligament and fascia to hold the ligament in its new position until the strip of aponeurosis shall have grown into place. By this means the round ligament is permanently prevented from slipping or being pulled back into the abdominal cavity, and the uterus is absolutely held in its normal position. Cuthbertson has found this operation to be exceedingly valuable in case of a cystocele accompanied by uterine prolapse. After an anterior colporrhaphy is done and the uterus is well drawn up and fixed, the cystccele does not recur.

144. Abstracted in The Journal, Dec. 6, 1913, p. 12099.

146. **Streptococcic Infections with Reference to Arthritis.**—Dyas was able to produce multiple suppurative arthritis in animals in from twenty-four to seventy-two hours, depending on the amount of strepococci injected, and this occurred regardless of whether attempts had been made to protect certain joints by injections of different solutions, or to protect the entire animal by intravenous injections of sodium salicylate. Swelling and stiffness of the larger joints were noticed after twenty-four to forty-eight hours in all cases. Post mortem, thick purulent material was found in the joints which could be scraped away leaving the synovial membrane dull and lusterless. Destruction of articular surfaces of bones, ligaments and cartilages may occur when the animals do not succumb too early to streptococcic septicemia. Cultures from the heart's blood and from the pus from joints in the animals used gave pure cultures of streptococci. The greatest pathologic changes occurred in those joints in which attempts had been made to protect them by injections of formalin or iodoform. Dyas found that intravenous or intra-articular injections of sodium salicylate in solutions as strong as 25 per cent. have no permanent effect on streptococcic arthritis; neither do intra-articular injections of solutions of formalin in glycerin or iodoform emulsion protect the joints so treated. Aspiration of the pus and injection of antiseptic solutions after infection of a joint had taken place did not give favorable results in the animals injected intravenously with streptococci.

149. **Self-Retaining Abdominal Retractor.**—This retractor consists of an oval frame 8 inches wide and 9 inches long. To this are fitted four retractor blades that work through slots in the frame. These are held in any degree of retraction desired by a ratchet device which may be released by pressing a button on each blade. These blades work through a funnel-shaped piece of rubber so that when the retractor is in place the margins of the incision, as well as the field of the abdomen covered by the rubber, are completely protected from septic material from within or without. This also obviates the use of towels applied to the margin of the skin incision.

Texas State Journal of Medicine, Fort Worth

June, X, No. 2, pp. 45-108

158 Spirit of Modern Medicine. M. L. Graves, Galveston.

FOREIGN

Titles marked with an asterisk (*) are abstracted below. Single case reports and trials of new drugs are usually omitted.

British Journal of Children's Diseases, London

June, XI, No. 126, pp. 241-288

1 Paroxysmal Tachycardia in Child Three Years of Age. R. Hutchison and J. Parkinson.
2 Food Value Required by Growing Girls, Aged Four to Fifteen. J. G. Sharp.
3 *Acute Bacillus Coli Infection of Urinary Tract in Children. D. G. Gordon.
4 Congenital Diffuse Non-Inflammatory Corneal Opacity in Two Sisters. F. Mexon.
5 Care of Cyst of Cecum in Child, Aged Three Months, Causing Intestinal Obstruction. W. G. Ball.

3. **Acute Bacillus Coli Infection.**—Examination of a series of cases treated at Paddington Green Children's Hospital, and also of those published in the recent literature on the subject, Gordon states, showed that they could be arranged in five groups according as they presented: 1. Symptoms of general feverish disorders, without any indication that one special system was affected. 2. Cerebral symptoms. 3. Pulmonary symptoms. 4. Abdominal symptoms. 5. Urinary symptoms.

British Medical Journal, London

June 20, I, No. 2790, pp. 1337-1392

6 *Murmurs of Dilated Hearts and Their Explanations. S. West.
7 Common Errors in Diagnosis and Treatment of Cardiac Diseases. F. W. Price.
8 Tincture of Digitalis (B. P.); Its Activity and Stability. W. L. Symes.
9 *Case of Acute Rheumatic Heart-Block. A. H. Gosse.
10 Influence of Total Fuel Value of Dietary on Quantity of Vitamine Required to Prevent Beriberi. W. L. Braddon and E. A. Cooper.
11 Case of Hypothyroidism in Male. I. G. Cobb.
12 Cerebral Cyst without Localizing Symptoms. A. Turnbull.
13 Case of Contraction of Upper and Lower Limbs after Still's Disease. J. C. Renton.

6. **Murmurs in Dilated Hearts.**—It is claimed by West that the ventricular dilatation murmurs are not regurgitant, but are due to eddies set up within the dilated cavities; in other words, that they are not valvular but intraventricular. They are connected with defective muscular action, but only so far as this leads to dilatation.

9. **Acute Rheumatic Heart-Block.**—The block in Gosse's cases lasted for eighteen days. Except for pyrexia there were no symptoms referable to the block, and without polygraphic records myocardial involvement could not have been diagnosed until the dropped beats occurred. Though the case was one of rheumatic heart-block, it developed apart from an attack of acute articular rheumatism. The evidence of rheumatic infection was the presence of numerous rheumatic nodules, and incidentally an attack of tonsillitis. By analogy with similar cases, acute and chronic, which have been examined histologically, it is assumed that the pathology in this case was a round-celled infiltration in the bundle of His caused by the rheumatic infection.

Glasgow Medical Journal

June, LXXXI, No. 6, pp. 401-475

14 Surgical Diagnosis in Acute Abdominal Conditions. D. Duff.
15 Pyorrhea Alveolaris and Auto-Intoxication. D. Glen.
16 Auto-Intoxication from Point of View of General Practitioner. H. A. McLean.

Journal of Laryngology, Rhinology and Otology, London

June, XXIX, No. 6, pp. 281-336

17 Acute Suppurative Otitis Media, Purulent Labyrinthitis and Leptomeningitis without Rupture of Tympanic Membrane. J. S. Fraser.
18 Rhinogenic and Otogenic Lesions of Third, Fourth, Fifth and Sixth Cranial Nerves. L. Onodi.

Journal of Pathology and Bacteriology, London

April, XVIII, No. 4, pp. 445-683

19 Bacteriology and Control of Acute Infections in Laboratory Animals. N. S. Ferry.
20 *Investigation Concerning Döhle's Leukocytic "Inclusion Bodies" in Scarlet Fever and Other Diseases. W. MacEwen.
21 *Causes of Non-Coagulability of Normal Menstrual Blood and of Pathologic Clotting. W. B. Bell.
22 Case of Puerperal Fever Associated with Enterococcus. R. Donaldson.
23 Addendum to Arsenious Jelly Method of Mounting Pathologic Specimens. S. Delèpine.
24 Tumor of Pelvis Dating from Roman Times (250 A. D.) Found in Egypt. M. A. Ruffer and J. G. Willmore.
25 *Action of Asbestos Fiber on Components of Simple Hemolytic System. S. Wyard.
26 *Simple Method for Preparation of Lecithin. H. MacLean.
27 Transplantable Sarcoma Arising in Uterus of Rat. C. Singer.
28 Regulation of Blood Volume in Normal and Nephritic Animals. A. E. Boycott.
29 *Status Lymphaticus. E. Emrys-Roberts.
30 Intestinal Flora of Infants and Young Children. W. R. Logan.
31 Regulation of Blood Volume in Experimental Nephritis. R. A. Chisolm.
32 *Immunity Conferred on Mice by Radium Irradiated Mouse Carcinoma. B. H. Wedd, A. C. Morson and S. Russ.
33 Description of Heat-Compensated Conductivity Salinometer. M. Coplans.
34 Continuous Type of Centrifugal Separator with Automatic Self-Cleansing Mechanism. M. Coplans.
35 Gel Filtration of Ultramicroscopic and Other Particles: Action of Asbestos. M. Coplans.
36 *Further Investigations on Strains of Tubercle Bacilli Isolated from Cases of Lupus. A. S. Griffith.

20. **Döhle's Inclusion Bodies in Scarlet Fever.**—A careful investigation of many cases and animal experiments have convinced MacEwen that the inclusion bodies are to be found in practically every case of scarlet fever during the first week of the fever. After that time they tend to disappear. MacEwen does not regard them as being of etiologic importance in scarlet fever. In scarlet fever the inclusions are large and plentiful, and are accompanied by a marked leukocytosis. The so-called *Spirochaeta scarlatina*, the author states, is not peculiar to scarlet fever, being found in other diseases, and therefore it has no claim to its title. MacEwen doubts that these thin thread-like structures are spirochetes. They are separate and distinct from inclusion bodies. Inclusions are to be found occasionally in measles, but are usually small in size and few in number. Further, the blood-picture differs markedly from that of scarlet fever, there being a leukopenia and not a leukocytosis. In diphtheria, inclusions may be present during the acute stage of the disease, but tend to disappear as the throat condition clears up and the temperature falls. In serum rashes, inclusion bodies may be present, although small in size and few in number.

Inclusions were found to be absent in 39 cases of German measles examined. This fact, coupled with the absence of leukocytosis in this condition, is a valuable aid in differentiating between German measles and scarlet fever. In typhus, erysipelas and septic conditions generally, inclusions are large in size and plentiful in number. In these conditions a marked leukocytosis was found, the general blood-picture most closely resembling that of scarlet fever. Inclusion bodies can be found in phthisis, but when present are small in size and few in number. The presence of sepsis, especially of streptococcal origin, plays an important part in the origin of inclusions. MacEwen concludes that inclusion bodies, taken along with the general blood-picture, are an aid to differential diagnosis if judiciously used, always remembering that definite sepsis will produce inclusions in the polymorph cells.

21. **Non-Coagulability of Normal Menstrual Blood.**—The investigation of the cases presented by Bell proved that the cause of the normal non-coagulability of menstrual blood is the absence of fibrin ferment, and that pathologic lesions can exist without interference with the normal function. Indeed, it seemed probable that actual lesions in the endometrium are essential for the production of the state of affairs which is responsible for the escape of fibrin ferment or its precursors in the menstrual discharge.

25. **Action of Asbestos Fiber on Hemolytic System.**—Wyard found that various kinds of asbestos fiber placed in contact with amboceptor remove it at different rates, the action of the untreated mineral fiber being most rapid. The untreated mineral removes amboceptor and complement at the same rate and with extreme rapidity, but the treated fiber removes complement at a greater rate than it removes amboceptor. Wyard concludes that asbestos fiber is a hemolytic agent. Its power is diminished by being steeped in normal saline solution, but can be restored by drying.

26. **Method for Preparation of Lecithin.**—A method is described by MacLean by which lecithin may be prepared easily and rapidly. The essential part of the method consists in the purification of the crude lecithin obtained by alcohol extraction. This is carried out by emulsification with water and treatment with acetone.

29. **Status Lymphaticus.**—Analysis of the ten cases recorded by Emrys-Roberts demonstrates—with the exception of one case, when life was cut short by fractured base following an accident—the coexistence of sudden and unexpected death from apparently trivial causes with an enlargement of the

thymus, and frequently of the systemic lymph-nodes and lymphoid follicles of the alimentary canal. Out of ten four were males and six females; their ages ranged from 6 months to 22 years. Three died while under an anesthetic; in two cases the anesthetic used was chloroform; in the third case A. C. E. mixture. In all, with the exception above noted, death was accompanied by respiratory failure. In all, with the exception of a boy suffering from Addison's disease, and to a certain extent a girl suffering from myasthenia gravis, the general condition was excellent and above the average.

32. **Immunity by Radium Irradiated Carcinoma.**—The authors confirm that mice are made immune to inoculation of carcinoma (Twort) by means of irradiated tumor cells. Prolonged irradiation of the cells abolishes this immunity-conferring power, but does not prevent an initial proliferation on their part. Some evidence is brought to show that the frequency of recurrence of this tumor after operation is diminished if the mice are reinoculated with irradiated tumor.

36. **Strains of Tubercle Bacilli from Lupus.**—With regard to the question as to whether or not tubercle bacilli become attenuated during residence in the skin tissues, it is pointed out by Griffith that in the division of bovine viruses there is no relation between the degree of attenuation and the duration of the disease. In the division of human viruses, on the other hand, there does appear to be some relation, two of three standard viruses having been obtained from cases of short duration, and the three most attenuated from cases of the longest duration; but the relation is not constant.

Lancet, London

June 20, I, No. 4738, pp. 1731-1798

37 Hygienic Aspect of Coal-Mining Industry in United Kingdom. F. Shufflebotham.
38 *Calculi in Common Bile-Duct Transduodenal and Retroduodenal Choledochotomy. H. B. Robinson.
39 Two Cases of Veronal Poisoning. M. H. Fraser.
40 Boots and Shoes from Historical and Surgical Points of View. E. M. Little.
41 Three Cases of Malignant Growth at Base of Bladder Treated by Diathermy. C. E. Iredell and R. Thompson.
42 Case of Angeioma in Cerebellar Peduncle: Fatal Intracranial Hemorrhage. C. W. Wirgman.
43 Case of Septicemic Purpura. A. W. Brodribb.
44 Three Cases of Advanced Extra-Uterine Pregnancy. R. Seheult.
45 Case of Non-Parasitic Cyst of Liver. J. Everidge.
46 Transport of Wounded in War. A. J. Hull.

38. **Calculi in Common Bile-Duct.**—In the *first* case described by Robinson a transduodenal opening was made and the stone removed from the ampulla of Vater by incising the mucous membrane (McBurney's operation). This is the method Robinson has used in several cases previously recorded, and, as in the later ones of the series, the duodenum was opened by a transverse incision at the level of the normal opening of the duct. In the other two cases the retroduodenal part of the duct was opened after mobilizing the duodenum. In the first of these, after making a supraduodenal opening in the ordinary way, a stone was felt fixed in the duct behind the duodenum and the scoop could not dislodge it; after mobilizing the duodenum and turning it over, the stone was easily felt in the duct, from which it was cut out from behind without any difficulty. In the second the lower part of the duct was packed with them, but a difficulty arose from the fact that there was very little interval between the junction of the hepatic and cystic ducts and the duodenum, too short a length in which to make an opening in the common duct conveniently. Accordingly, freeing the duodenum was resorted to, the bowel was pushed downward and to the left, and an opening was made in the retroduodenal part of the duct through which the stones were easily removed.

Medical Chronicle, London

June, XXVII, No. 3, pp. 145-220

47 *Anterior Lobe of Pituitary Gland. C. P. White and R. H. Titcombe.
48 Some Early Printed and Rare Books in Library of Manchester Medical Society. A. F. C. Davey.

47. **Anterior Lobe of Pituitary Gland.**—Extract of the anterior lobe of the pituitary gland, and of the dried anterior lobe itself were fed by White and Titcombe to rabbits and mice. The treatment had some effect (1) in arresting the normal increase in the proportion of fat as the animals grow; (2) in transferring some of the phosphorus from the inorganic condition to the organic (chiefly nucleoprotein); (3) in increasing the proportion of calcium salts other than calcium phosphate (presumably carbonate). In two of the treated mice the ratio of calcium to inorganic phosphorus is higher than the ratio in $Ca_3(PO_4)_2$, which is 1.93. In none of the animals, mice or rabbits is this ratio attained. In the control rabbits increase in weight was associated with an increased proportion of non-phosphorized fats and lipoids, an increased proportion of organic substances soluble in acid, and a diminution of the residue, especially of the nucleoprotein portion. The ratio of inorganic phosphorus to organic increased. In the rabbits the differences between the treated and control animals were not so marked as in the mice. The chief differences were in the proportion of acid extract and residue to the dry weight and in the proportion of phosphorus and calcium to the acid extract and the ash.

Practitioner, London

June, XCII, No. 6, pp. 745-896

49 Symptoms and Complications of Sinusitis. S. Thomson.
50 Blood-Clot Method as Applied to Mastoid Operation. A. Dighton.
51 Use of Nasopharyngoscope in Otorhinology. J. W. Wood.
52 Relation of Throat and Nose to Some Diseases Met with in General Practice. W. Wilson.
53 *Painful Affections of Shoulder. C. W. Buckley.
54 Difficulties with Which Anesthetist Has to Contend. R. W. Hornabrook.
55 *Intensive Nascent Iodin Treatment of Tuberculosis. J. F. H. Dally.
56 *Treatment of Early Tuberculosis by Intensive Nascent Iodin Administration. E. G. Reeve.
57 Work in Urinary Surgery. J. W. T. Walker.
58 Dental Work. J. G. Turner.
59 Neuroelectricity. J. H. Wilson.
60 Field for High-Frequency Treatment. T. D. Luke.
61 Treatment by General Rhythmic Faradization. I. G. Cobb.
62 Neuritis Treated by Electricity. N. Davies.
63 General Practice Treatment of Chronic Constipation by Electric Massage. H. G. Greaves.

53. **Painful Affections of Shoulder.**—The most frequent cause of pain and stiffness in the shoulder, Buckley says, is inflammation of the subacromial bursa. The characteristic feature is pain, associated with limitation of movement of a definite and peculiar type, namely, inability to abduct the arm beyond the level of the shoulder or to rotate it except to a very slight extent. The patient cannot put his hand to the back of his head nor yet to the back of his waist, and if the scapula be firmly held in position, he can only raise the arm from the side to the extent of about 10 degrees. This peculiar limitation of movement is due to the muscles, whose tendons lie in the floor of the bursa, namely, the supra- and infraspinatus, and to a less degree the teres minor. These muscles all take part in movements of rotation, while abduction is generally commenced by the supraspinatus, the deltoid coming into play after the movement has been begun. If the bursa is inflamed, any movement of these tendons will be extremely painful and will be prevented by spasm. Flexion and extension of the arm—that is, movement forward and inward, or backward and outward—will be little if at all interfered with, since the muscles performing this movement do not come into relation with the bursa.

The pain is variable in degree. In slight or chronic cases, it may be perceived when movement is attempted; while in the more severe forms, in which there is much effusion into the bursa or the surrounding structures are implicated in the inflammatory process, it may be intense even at rest, and sometimes require morphin for its relief. It is felt chiefly around the point of the shoulder, and radiates down the arm to the insertion of the deltoid, in which it is sometimes more severe than at the shoulder, and often accompanied by hyperesthesia. In severe cases it may even shoot down to the fingers and closely simulate neuritis. It is also commonly referred to the vertebral end of the supraspinous fossa, in which hyperesthesia is sometimes found. The muscles round the shoulder-joint may be much wasted, either from disuse or from a reflex trophic effect, analogous to that seen in acute synovitis of the knee. There may in severe cases also be wasting of other muscles of the arm and edema of the hand; in such cases the diagnosis from brachial neuritis is very difficult.

In the treatment rest is of the utmost importance in the acute stages, and on the completeness of the rest the length of disability will materially depend. In severe cases the patient should be kept in bed until the more acute symptoms have subsided. The usual methods should be adopted to further the subsidence of the inflammation. When the patient gets about the arm must be supported in a sling carefully adjusted so as to take all weight off the shoulder, until all sign of inflammation, whether of bursa or nerve trunks, has disappeared and only adhesions remain to be dealt with. The arm from the beginning should be moved passively once or twice a day through the whole range of movement possible in the acute stage, and as the condition becomes more chronic the patient should be instructed to abduct the arm by placing it against a wall and gradually pushing it up to the highest point he can reach. The patient must be warned against perpetually fidgeting with the arm in what should be intervals of rest.

55. **Nascent Iodin Treatment of Tuberculosis.**—Dally's experience with the treatment of pulmonary tuberculosis by means of intensive nascent iodin leads him to the belief that, for the stratum of society from which out-patient practice is drawn, this method is of far greater and of more definite value than the common one of giving cod-liver oil and tonics, with occasional spasmodic bursts of sanatorium régime, too short, owing to the exigencies of the situation, to be of any permanent benefit except in a very limited number of cases. The fact that, in the majority of instances, the sputum rapidly shows absence of tubercle bacilli, proves of itself that on these nascent iodin has had a definite bactericidal influence. Glandular tuberculosis yields readily to this remedy. In some cases of asthma it is worth a trial, for it has the effect of causing notable diminution in the respiratory distress, as well as of preventing the paroxysmal attacks. The fetor of bronchiectasis and of chronic cavities is lessened. It is beneficial in the acute specific infections, particularly those of pneumonic and bronchopneumonic type; in skin disease, notably acne vulgaris, and in various pathologic processes.

Finally, nascent iodin has a wide scope in the amelioration of states in which the arterial blood-pressure is continuously raised. In the treatment of arteriosclerosis, Dally has found it of great service in progressively lowering the already too high maximal and minimal pressures to more normal levels, and thus in checking the further development of these insidious and harmful conditions. The special reducing agent used in this treatment in order to liberate nascent iodin from the iodid in the blood and tissues consists of chlorin in carefully prepared aqueous solution, the constituents being chlorin and some of its oxids, together with potassium chlorid. Just as iodin is held in stable solution by the iodid present in solution, so is chlorin held in like manner by the chlorid and prevented from vaporizing in excess. Through the agency of chlorin, nascent iodin is set free intensively from the iodid in the blood in proportion to the amounts of chlorin solution successively administered.

56. **Treatment of Tuberculosis by Nascent Iodin.**—Reeve has treated nearly all patients with a morning dose of 20 grains of potassium iodid, instead of 30 grains as before, and, he says, children down to 3 years of age stand this dose very well. The chlorin water has been given regularly in three doses of 1 ounce each at the ordinary times. As to the progress of cases which have apparently been cured, he has heard from two patients who stopped treatment just a year ago, both saying that they had been at work and remained quite well. From his results, Reeve thinks one is justified in giving a good prognosis in all early cases of pulmonary tuberculosis, and can expect great and lasting improvement in the advanced cases.

Annales de Médecine et Chirurgie Infantiles, Paris

June 1, No. 11, pp. 359-392

64 *Sunlight Therapy at the Seashore. E. Gaujoux.
65 Diagnosis and Puncture in Treatment of Pericarditis with Effusion. Guinon and Malarte.

64. **Heliotherapy at the Seashore.**—Gaujoux summarizes the work of the recent international congress for thalassotherapy (*thalassa*, the sea), which met in May at Cannes and devoted its sessions exclusively to the one subject, heliotherapy (*helios*, the sun). Heliotherapy has apparently definitely established the importance of conservative treatment for surgical tuberculosis, but all the work must not be left to the sun. Its action must be aided and supplemented by immobilization where needed and by opening up deep lesions so as to render them more accessible to the healing sunshine. Nearly all the specialists in heliotherapy advocated exposures of the entire body to the sunlight, whether there was merely a local lesion or not. Children seem to display a special tolerance for exposure to sunshine, but it has not yet been decided whether the conclusions based on experiences with heliotherapy of children can be applied to adults or not.

Where strict individualization is not possible, the general rule is to begin with five- or ten-minute exposures, increasing the length by a few minutes each day. The limbs are first exposed, gradually enlarging the exposure to include the chest and abdomen. The course of solar treatment should be suspended, resumed or intensified proportional to the individual response. It was said to give excellent results generally with superficial torpid lesions, in bone affections and in painful gynecologic affections. It seems to be dangerous in the hectic period and in all acute forms of pleuropulmonary tuberculosis. It is also futile when there is rapid destruction of tissue in pulmonary tuberculosis, but when the disease is in a torpid, non-febrile stage, sunlight treatment gives a very large percentage of cures. It often benefits tuberculous nephritis in an early stage and albuminuria, orthostatic or tuberculous, and thus may ward off impending disease of the kidney, of which this was the first sign. Cystitis and prostatitis also are often amenable to heliotherapy.

Archives générales de Chirurgie, Paris

May, VIII, No. 5, pp. 513-640

66 Operation on Femoral Hernia by Inguinal Route. Vautrin.
67 Interpretation of Roentgenoscopy of Head of Femur. (Radiographie des cols fémoraux normaux et pathologiques.) P. Mauclaire and Niel.

Archives des Maladies du Cœur, etc., Paris

June, VII, No. 6, pp. 369-432

68 Deformity of Aorta Causing Symptoms of Stricture. (Pseudo-rétrécissement aortique par anomalie d'origine des troncs sus-aortiques.) L. Bard.
69 Latent Aneurysm of Arch of Aorta. M. Carrieu and S. N. Oeconomos.
70 *Syphilis, Tobacco and Alcohol as Factors in Intermittent Claudication. (Syphilis et artérite oblitérante des membres inférieurs.) M. Dehon and J. Heitz.

70. **Intermittent Claudication.**—Dehon and Heitz give the details of fourteen cases of angiosclerotic dysbasia or intermittent claudication, and call attention to the fact that syphilis was known in half of them. This large percentage suggests the importance of at least tentative treatment for syphilis in all cases of obliterating arteritis in the legs. One of their patients improved remarkably under specific treatment and the Wassermann reaction became negative. Some with known syphilis had a negative reaction. In some of the known syphilitics the intermittent claudication was not benefited in the least by the specific treatment. Tobacco and alcohol were contributing factors in some of the patients, possibly outweighing in importance the syphilis in these cases. They declare that any sign of tabes or leukoplasia should call at once for specific treatment in every case of intermittent claudication, even if there is nothing else to suggest syphilis and the Wassermann proves negative at the first test.

Bulletin de l'Académie de Médecine, Paris

June 9, LXXVIII, No. 23, pp. 755-804

71 Bed for Advanced Heart Disease. P. Marie, Nachmann and P. Reynier.
72 Connective Tissue Living Twenty-Eight Months Outside of the Organism. A. Carrel and S. Pozzi.
73 Urine Tests for Cancer Unreliable. (Recherches sur les troubles des échanges chez des cancéreux. L'azote ammoniacal et l'amino-acidurie.) A. Robin.
74 Astigmatism and Military Service. F. Lagrange.
75 *Paralytic Myasthenia versus Asthenia from Adrenal Insufficiency. H. Claude.
76 *Attraction of Microbes in Air by Chilled Surfaces. (Principes d'une méthode destinée à diminuer la contagion des maladies transmissibles par l'air dans les salles de malades ou les lieux habités.) T. Trillat.

75. **Myasthenia.**—Claude emphasizes the necessity for distinguishing between asthenia of the type known as Erb's paralytic myasthenia and that resulting from defective functioning of the adrenals. The former requires organotherapy plus strychnin and phosphorus; this may yield very satisfactory results, even in severe forms of the Erb syndrome. In the adrenal insufficiency cases, he says that adrenal treatment and heart stimulants are generally all that is necessary.

76. **Microbes in the Air Attracted to Chilled Surfaces.**—Trillat has found that microbes can propagate in droplets and infect virgin droplets and increase to an actual swarm, and that these swarms or clouds of germ-containing droplets are not swept along in currents of air or drop by gravity as their sole movements. Additional to these movements they are attracted toward and cling to a chilled surface. We have to contend with microbes not only in dry dust but in the humidity in the air, and these clouds of invisible germ-laden vapor become condensed on a chilled surface. This fact might be utilized in preventing escape of germs or in protecting against them.

Journal d'Urologie, Paris

June, V, No. 6, pp. 681-839

77 *Urea Content of Blood as Basis for Prognosis in Chronic Nephritis. (Recherches sur la constante uréo-sécrétoire d'Ambard.) F. Widal, A. Weill and P. V. Radot.
78 *Traumatic Nephritis. A. Pousson.
79 *High-Frequency Current in Treatment of Bleeding Bladder Tumors. (Valeur hémostatique de l'électro-coagulation des tumeurs vésicales.) E. Desnos.
80 Movability of the Kidney in Connection with Diagnosis of Renal Calculi. Rafin and Arcelin.
81 Nephropexy. G. Marion.
82 *Tuberculosis of the Bladder. (La cystoscopie dans la tuberculose vésicale.) M. Heitz-Boyer.
83 Seventeen Prostatectomies under Exclusively Local Anesthesia. F. Legueu.

77. Practically the same article was reviewed on page 66, abstract 54.

78. **Traumatic Nephritis.**—Pousson summarizes from the literature twelve cases of nephritis developing after a trauma and adds the details of one from his own experience. In a number there was no preceding infection known or alcoholism, but there was hematuria in all but three cases, although in some it did not develop until several days after the accident. Fever may come on at once or not until several days or weeks later, after getting chilled or with an infectious sore throat. Edema may develop at once or not until months or even years later, but it is liable to affect the side corresponding to the injured kidney. In one of the cases the left arm swelled in the month after the accident to twice its size and the whole left side became dropsical. The symptoms and course of traumatic nephritis closely resemble those of Bright's disease, and the necropsy findings seem to be identical. The inflamed kidney has a pathologic action in time on its sound mate, not only by the reno-renal reflex and the injury from irritation of the nervous system of the kidneys but also by absorption of cell-toxins from the diseased kidney, and these cytotoxins seem to act first and foremost on the cells of the other kidney.

79. **Electro-Coagulation of Bladder-Tumors.**—Desnos qualifies Beer's method as a precious therapeutic resource, especially to arrest bleeding from a tumor in the bladder. The high frequency current both coagulates and cauterizes, and the hemorrhages were arrested at once in two cases he reports in which hematuria was the only symptom, and also in a third case with chronic cystitis.

82. **Cystoscopy with Vesical Tuberculosis.**—Heitz-Boyer's discussion of tuberculosis of the bladder is accompanied by twelve colored views of the typical cystoscope findings, each with a descriptive title in five languages.

Lyon Médical

May 24, XLVI, No. 21, pp. 1133-1200

84 Advantages of Treating Tumors of the Bladder by the High-Frequency, Low-Tension Current. Arcelin and Giuliani.

Presse Médicale, Paris

XXII, Nos. 46-48, pp. 437-464

85 Acidity of Urine in the Tuberculous. H. Labbé and G. Vitry.
86 Operative Transformation of Deep into Superficial Lesions as Aid to Heliotherapy in Surgical Tuberculosis. E. Grinda.
87 *To Make Scarlet Fever and Measles Mild and Non-Contagious. (Traitement préventif et curatif de la scarlatine et la rougeole par la méthode du Dr. Robert Milne.) M. N. Wilbouchewitch.
88 *Etiology of Scarlet Fever. H. Roger.
89 *Periodically Recurring Asthenia. J. Dejerine and E. Gauckler.

87. **To Render Scarlet Fever and Measles Mild and Non-Contagious.**—Wilbouchewitch remarks that Milne's method of treating these diseases ignores the official British regulations in regard to isolation and disinfection. At the first sign of trouble the child is put to bed, the throat treated with a disinfectant and the skin with eucalyptus oil, rubbed in all over the body morning and evening for four days and then once a day till the tenth day of the disease. The eucalyptus oil is not irritating, and it is not necessary to cut girls' hair. The throat is swabbed as high up and as low down as possible with 10 per cent. phenol in oil, every two hours for the first twenty-four. This need not be continued longer in scarlet fever, but in measles he repeats the swabbing three times a day for several days. To protect the environment against contagion, he suspends over the head and chest of the patient a large hoop over which is thrown a sheet of transparent cheese-cloth which falls on the bed all around and is sprinkled now and then with the eucalyptus oil.

Milne is physician to the Dr. Barnardo Homes for Boys, and by this treatment he has reduced the morbidity from acute infections to the minimum. The disease runs an exceptionally mild course, without complications on the part of nose, ears, bronchi or kidneys, and the children are well and can go back to school in ten days. The disease does not spread to those in close contact, not even to a child sleeping with the patient. The exposed are kept in an atmosphere of eucalyptus; it is sprinkled on their pillows, and ten or fifteen drops on their linen. They are kept in the house for a day or so. The scarlet-fever patient after this treatment has been applied does not contaminate his books, clothing, dishes, etc., but those he was using just before the treatment was applied must be sterilized, that is, sprinkled with eucalyptus oil and exposed to the sun for a few hours. The main point is to begin early, checking the development of the disease into a virulent type.

88. **Etiology of Scarlet Fever.**—Roger emphasizes the necessity for remembering always that the germs of scarlet fever inhabit the mouth from the very first and are extremely contagious, resistant and long lived. Desquamation spreads the disease only as the germs from the mouth get on the desquamating scales; those from the lips and hands are thus most dangerous.

He says that the disease is essentially a septicemia with a specific sore throat. The eruption is secondary and inconstant. He found a history of known contagion in only 16.8 per cent. of 2,213 cases in adults. This suggests that incomplete abortive cases in the supposedly healthy must often be responsible for the spread of the contagion. It also suggests the possibility of contagion from other beings besides man. Scarlet fever seems to be rare and mild in Japan, while frequent and grave in England. This renders the more significant the results achieved by Milne—mentioned in the preceding abstract—among the thousands of waifs in the Barnardo homes.

89. **Intermittent Physical Weakness.**—Dejerine and Gauckler are convinced that there is a melancholia of the body as well as of the psyche. Periods return in which the slightest effort may cause fatigue or extreme asthenia. Such patients are generally classed as neurasthenics, but they are not necessarily always neurasthenic. Their recurring physical depression corresponds in general medicine to cyclic insanity in psychiatry. It is accompanied by disturbances indicating an upset in the ductless gland system, and the success of treatment aiming to remedy this confirms the correctness of this assumption as to the true nature of this intermittent asthenia. Rest and thyroid treatment proved effectual in some cases; in others hypophysis extract or both combined succeeded better. By this means he cured two patients who for years had had these attacks of asthenia which lasted two or three months, and returned two or three times a year. In five cases no benefit was apparent from the organotherapy.

Revue de Médecine, Paris

May, XXXIV, No. 5, pp. 321-392

90 Spa Treatment of Gall-Stone Colic. A. Therre.
91 Landouzy's Typhobacillosis. A. Krokiewicz.

Semaine Médicale, Paris

June 17, XXXIV, No. 24, pp. 277-288

92 Fracture of Lower End of the Radius in Children. H. Vulliet.

Beiträge zur Klinik der Tuberkuloze, Würzburg

XXXI, No. 1, pp. 1-139. Last indexed June 13, p. 1932

93 Intracellular Position of Tubercle Bacilli in the Sputum of No Import for Prognosis. (Bedeutung der intrazellulären Lage der Tuberkelbazillen im Auswurf.) M. Cohn.
94 Technic for Artificial Pneumothorax. A. Hofvendahl.
95 *Development and Number of Tubercle Bacilli in the Sputum in Connection with the Clinical Course. A. Kirchenstein.
96 Tubercle Bacilli in Blood in Guinea-Pigs. (Vorkommen von Tuberkelbazillen im strömenden Blute beim tuberkulösen und tuberkulinisierten Meerschweinchen.) Hage.
97 Skin Tuberculin Test in Prophylaxis of Tuberculosis. (Von Pirquets Probe in der praktischen Vorbeugung der Tuberkulose.) K. Isager.
98 Percutaneous Tuberculin Treatment of Tuberculosis. (Spezifische Tuberkulose-Bekämpfung im grösseren Stil.) C. Spengler and J. Petruschky.
99 *Acute Tuberculous Peritonitis; Two Cases. A. Troell.

95. **Biology of the Tubercle Bacilli.**—This communication from Spengler's private laboratory at Davos is accompanied by five large charts to illustrate the connection between the various forms of the tuberculosis virus, the resting, sporoid form, Spengler's *Splitter* and Much's granula. All the forms which take stains well are of the progressive type; the others are regressive. When the tuberculous organism becomes chilled or there is superposed infection, or it suffers in any other way, the resting sporoid forms start increased proliferation. Hence, the more stable the numbers of the resting sporoid forms, the higher the immunity. It is thus possible by charting the bacteriologic picture, especially the changes in the different forms and numbers of the bacteria, to estimate the present status and the outlook of the disease.

99. **Acute Tuberculous Peritonitis.**—Troell reports two cases of an acute peritonitis developing with a chill and other symptoms suggesting appendicitis, but the laparotomy revealed the appendix sound with acute diffuse, suppurative peritonitis, the pus quite thin and in great abundance. Tuberculosis was evident from both the microscopic findings in the first case, and was more than probable in the second as gonorrhea and pneumococcus infection could be almost positively excluded. Both patients were young men of 18, a clerk and a tailor; the former had always been healthy before; the tailor had had chronic diarrhea for a long time seven years before.

Beiträge zur klinischen Chirurgie, Tübingen

XC, No. 3, pp. 515-742. F. Trendelenburg Number

100 Congenital Megacolon. (Ueber Hirschsprung'sche Krankheit und abdomino-anale Colonresektion mittelst der Invaginationsmethode.) G. Perthes.
101 *Surgical Affections Caused by Ascarides. Schloessmann.
102 Roentgenoscopy in Surgical Stomach Disease. W. Hartert.
103 Fibrous Ostitis. H. Kolaczek.
104 Cystic Cancer of the Neck. (Branchiogenes Cystencarcinom.) H. Kolaczek.
105 Laryngocele. (Echte Kehlsackbilding.) A. Reich.
106 Snapping Shoulder. (Die schnellende Schulter.) A. Reich.
107 Rupture of Tendon of Long Head of Biceps. E. Borchers.
108 *Pseudarthrosis in Children. O. Jüngling.

101. **Surgical Affections from Ascarides.**—Schloessmann has encountered 11 cases in the last two years in which an operation was required for evil done by helminths. In 6 cases the ascarides were in the open abdominal cavity; in 3 there was ileus from obstruction by them; they had perforated the intestine in one case and in another they had caused adhesions and volvulus. In one case as the abdomen was opened the appendix was suddenly stretched out to nearly twice its length by an ascaris within. Schloessmann warns that it is safer to make no attempt to remove the helminths at the laparotomy. Repugnant as it is to leave them alive, the successful outcome in his cases confirms the wisdom of doing so and trusting to santonin to expel them later; 117 were thus voided in one of his cases and 489 in another.

108. **Pseudarthrosis in Children.**—Jüngling tabulates 139 cases and compares conditions with those in adults. His figures show that while fractures of the leg form only 8.8 per cent. of all the fractures of children, pseudarthrosis of the leg forms 76.3 per cent. of all the varieties of pseudarthrosis, and he discusses the reasons for this. The prognosis seems to be very bad as in time the atrophic ends of the fragments lose the power of regeneration. Congenital pseudarthrosis has naturally the gravest prognosis.

Berliner klinische Wochenschrift

June 15, LI, No. 24, pp. 1109-1156

109 Differentiation of Effusions and Transudate by Albumin Content. (Zur Kenntnis der durch verdünnte Essigsäure fällbaren Eiweisssubstanz in serösem Erguss.) K. Ujihara.
110 *Severe Disturbances in Vision after Atoxyl. (Sehstörungen nach Atoxyl.) R. Steinebach.
111 Vaccine Therapy of Acute Gonorrhea. (Zur Immunotherapie der akuten Blennorrhagien.) P. v. Szily.
112 The Cosmetic Field in Medicine. (Kosmetik und Anatomie.) E. Saalfeld.

110. **Blindness from Atoxyl.**—In the case reported by Steinebach a woman of 36, moderately addicted to alcohol, with an itching skin affection for five years and in the last few months increasing pallor and weakness, was given a course of atoxyl on account of her secondary anemia. She was given twelve small subcutaneous injections in the course of twenty-six days and her general condition was materially improved but she noticed that vision was somewhat impaired for nine or ten months. Then it grew rapidly worse and by the eleventh month she was almost totally blind. The findings in the eyes point unmistakably to injury from the atoxyl although only a total of 1.2 gm. had been given. The light and convergence pupil reactions are well preserved although fifteen months now have elapsed since the first signs of visual trouble were apparent. Diarrhea developed and has persisted. The smallest total dosage of atoxyl followed by blindness heretofore was 3.4 gm. in the cases on record. A predisposition seems to have been present in all the cases, cachexia from cancer or old age, auto-intoxication, chronic infections or intoxications, and especially chronic alcoholism —any of which should strictly contra-indicate the use of atoxyl.

Deutsches Archiv für Klinische Medizin, Leipzig

CXIV, Nos. 5-6, pp. 433-630. Last indexed June 6, p. 1851

113 Pain in Joints from Irritation of Spinal-Cord Segments by Visceral Disease. (Zur Frage der als Begleiterscheinung bei Leiden der Visceralorgane auftretenden Knie- und Hüftgelenkerkrankungen.) M. Lapinsky.
114 Measuring the Force of the Pulse. (Wort und Sache in der dynamischen Pulsdiagnostik.) T. Christen.
115 The Innervation of the Adrenals. O. Renner.
116 The Venous Pulse and Tricuspid Insufficiency. J. Neumann.
117 Tests of Kidney Functioning. (Das "Konzentrationsverhältnis" von Stickstoff und Chlor bei gesunden und kranken Nieren.) J. Hefter and R. Siebeck.
118 Possibility of Nourishing the Heart Muscle by Injecting Sugar Solution into the Greater Circulation. T. Büdingen.
119 Perpetual Arhythmia. B. Romeis.
120 Respiratory Quotient in Chronic Anemic Conditions. F. Relly.

Medizinische Klinik, Berlin

June 14, X, No. 24, pp. 1003-1044

121 *Calcium Salts in Therapeutics. (Kalksalze.) F. Göppert.
122 Indications for Tonsillectomy. (Ausschälung der Gaumenmandel.) E. Glas.
123 Roentgenologic Basis for Classification of Intractable Constipation. F. M. Groedel.
124 The Handwriting in Chorea. G. Lomer.
125 Treatment of Habitual Dislocation of the Patella. H. Luxembourg.
126 *Alkali in Treatment of Diabetes. G. G. Wilenko.
127 Diagnosis of Lung Tumors. D. Rothschild.
128 Diathermia. W. Laqueur.
129 The Aorta Curve. (Methode, die Pulskurve der Aorta zu bekommen.) K. Mayer.
130 Respiration Reaction to Heart Action. (Atmungsreaktionen bei gesunden und kranken Herzen.) A. Pongs.

121. **Calcium Salts in Therapeutics.**—Göppert has never witnessed any benefit from the calcium salts in acute coryza or pleurisy with effusion. Prolonged mild calcium medication seems to reduce the tendency to hay-fever; increasing the dosage during an attack has often proved effectual. Patients generally find it most convenient in the form of calcium citrate, 4 or 5 gm. a day, kept up for months. Some forms of urticaria—especially in the pregnant—are favorably influenced, but he has seen urticaria first come on while large doses of calcium were being taken. Eczema in infants was never cured with calcium in his experience and only once was marked transient improvement observed.

A tendency to asthma is often favorably influenced by calcium salts taken over a long period, as also epilepsy in connection with tetany in adults. Both theoretically and practically, calcium is indicated in latent tetany in children, the so-called spasmophilia. Fifty children in this category were thus treated with fine results; every two or three hours from 1.5 to 2 gm. of calcium chlorid (crystallisatum) is given up to a total of 8 to 14 gm. in the twenty-four hours, lengthening the intervals later until only 4 gm. is being taken; this is kept up systematically. By this means the brain is saved from the effect of the convulsions while the feeding of the child is not interfered with and it can receive adequate nourishment without bringing on the convulsions anew.

(The above doses are twice as large as the corresponding doses of the official calcium chlorid, U. S. P.)

126. **Treatment of Diabetes.**—Wilenko presents new evidence to show that glycolysis in blood and organs is hampered when the blood becomes even a trifle less alkaline than normal. Glycolysis in the test-tube is totally arrested by an increase in acidity of the medium from 1/1,000,000 to 0.2/1,000,000. The already impaired glycolysis in the diabetic suffers particularly from any change in the physiologic reaction, and recent tests of the carbon dioxid tension of the blood have confirmed the acidification of the organism in diabetes, and emphasize the necessity for restoring the balance by administration of an alkali without waiting for coma to develop. This is especially necessary on account of the acidity-promoting influence of the measures we enforce on diabetics, the preponderance of meat and the elimination of carbohydrates from the diet, all tending to increase acidity. Even when there are no signs of acetonuria, an alkali should be given when the carbon dioxid tension in the blood shows abnormal acidity. An alkali, he further insists, should be given systematically when we have to regulate the diet to exclude carbohydrates and include much meat. When this is done, acetonuria is warded off. There *is nothing* to show that the alkali acts on the cause of the diabetes; its effect is merely symptomatic, but as such it wards off or neutralizes acidosis with all its evil consequences. He gives no advice as to the preferable alkali or dosage.

Monatsschrift für Geburtshülfe und Gynäkologie, Berlin

May, XXXIX, No. 5, pp. 597-750

131 *Significance and Treatment of Retained Pieces of Placenta. G. Winter.
132 Air Embolism with Criminal Abortion. (Luftembolie bei krimineller Abtreibung.) M. Richter.
133 Excessive Rotation of the Back as Result of Prolapse of the Arm. (Innere Ueberdrehung des Rückens infolge Armvorfalls.) E. Sachs.
134 Continuous Röntgenization for Deep Radiotherapy. (Die kontinuierliche Röntgenisation, eine neue Methode der Tiefenbestrahlung.) J. Müller.
135 *Auto-Infection in Gynecology. (Bakteriologische Untersuchungen bei gynäkologischen Erkrankungen.) W. Benthin.

131. **Retention of Scraps of Placenta.**—Winter holds that the retention of pieces of placenta never causes puerperal fever. It generally leads merely to a local metritis with destruction of the remnant of placenta. The severe cases of puerperal fever following retention are often due to the examinations for the retained fragment. Such examinations should not be made, he insists, and the uterus should not be curetted for the removal of such fragments. This is particularly dangerous when hemolytic streptococci are present. The spontaneous expulsion of the retained fragment occurs without danger. When the retention of a piece of placenta is recognized during delivery, it should be removed at once. If it is discovered during the puerperium, it should be removed at once if there is no fever or if there is severe hemorrhage even in febrile cases. If hemolytic streptococci are present, no curetting should be done until they disappear. If the peritoneum, parametrium or adnexa are diseased, conservative treatment should be the rule. Curetting should be done whenever possible with the finger and never with a sharp instrument.

135. **Auto-Infection in Gynecology.**—Benthin's conclusions are based on 500 gynecologic cases, 1910 to 1913, with operative treatment in 440. There was a mortality of 29.4 per cent. in cases where hemolytic streptococci were found in the vaginal secretion, and of only 4.2 per cent. in the cases where they were not found. By auto-infection he means simply that the infection was with germs previously present in the vagina. He believes this high mortality must be overcome by clearing the vagina from bacteria before operating, rather than by any precautions during the operation or treatment after. More attention should be devoted to the vaginal secretion than heretofore. There is no certain means of sterilizing the vagina, but he found Schweitzer's method of irrigating with 0.5 per cent. lactic acid, effective in many cases, but it failed in the two cases of carcinoma in which it was tried.

Monatsschrift für Kinderheilkunde, Leipzig

XII, No. 12, pp. 687-758

136 *Alcoholic Extracts of Vegetables in Treatment of Scorbutus. E. Freise.
137 *Spontaneous Recovery from Scrofuloderma. K. Bahr.
138 Coagulability of the Blood in the Early Weeks of Life. E. Flusser.
139 Fate of Infants with Spasm of the Pylorus and Habitual Vomiting. E. Liefmann.
140 Increased Permeability of Infant's Intestine to Foreign Albumin and Disaccharids in Digestive Disturbances. Hayashi.

136. **Alcoholic Extracts of Vegetables in the Treatment of Scorbutus.**—Freise gives the history of a severe case of Barlow's disease in a child 11 months old which was clinically cured within seven weeks by the administration of a total of 13.79 gm. of an alcoholic extract of the common beet. The extract was given in the form of an emulsion in water, 2 c.c. of the extract in 100 c.c. of water per day with a few drops of normal hydrochloric acid added. Roentgen examinations repeated periodically showed extensive repair going on in the affected bones.

137. **Spontaneous Recovery from Scrofuloderma.**—Bahr describes five cases in children under 2 years of age. In only one of these was specific treatment with tuberculin given. The others recovered spontaneously and have been free from recurrence during the year since with no signs of any other tuberculous affections. In all except one of the cases either father or mother had tuberculosis. Even though scrofuloderma is the benign form of tuberculosis, it must be disseminated from some internal focus, which has shown the same tendency to spontaneous healing as the tendency to spontaneous healing of the skin affection. This shows that scrofuloderma and probably other forms of tuberculosis during the first two years of life display a tendency to

spontaneous recovery and that their disappearance does not prove the success of any specific treatment that is being given for the tuberculosis.

Münchener medizinische Wochenschrift

June 16, LXI, No. 24, pp. 1321-1376

141 Technic for Induced Pneumothorax. F. Moritz.
142 *New Technic for Salt Solution. (Methode der schnellsten Darstellung absolut steriler Kochsalzlösungen für Injektionszwecke, speziell für Salvarsaninjektionen.) K. Taege.
143 Peptolytic Ferments Appear in Urine during Destruction of Cells on Large Scale. (Ausscheidung eines *peptolytischen Fermentes* im Harn bei verschiedenen Formen der Eiweisszerfallstoxikosen—Verbrühung und Hämolysinwirkung.) H. Pfeiffer. (Nachweis spezifischer peptolytischer Fermente im Harn.) W. Sagel.
144 Turbidity and Opalescence in Serum of the Pregnant and the New Born. D. Hellin.
145 Oxidase in Melanotic Large Intestine. F. Niklas.
146 *Abderhalden Reaction in Chlorosis. (Störungen der inneren Sekretion bei Chlorose.) A. Schmitt.
147 Epinephrin plus Hypophysis Extract Effectual in Tiding Sick Children through Acute Infectious Heart Weakness. P. Rohmer.
148 Salvarsan Aborts Incipient Anthrax. (Salvarsanbehandlung des Milzbrandkarbunkels.) L. Buberl.
149 *Pyelocystitis in Infants. (Infektiöse Erkrankungen der Harnorgane im Säuglingsalter.) H. L. Kowitz.
150 Present Status of Psychotherapy. v. Stauffenberg. Commenced in No. 23.
151 *Friedmann's Remedy for Tuberculosis. (Das Friedmannsche Tuberkuloseheilmittel.) Editorial.

142. Absolutely Sterile Salt Solution from Hydrant Water.—Taege's method is to add hydrochloric acid to ordinary hydrant water and thus sterilize it absolutely. Then he adds sodium hydroxid in the proper proportion to produce sodium chlorid in the desired percentage.

146. Disturbances in Internal Secretions in Chlorosis.—Schmitt regards it as significant that the serum from eighteen girls with chlorosis regularly digested ovary and uterus tissue when the dialysis test was applied and did not digest other tissues. He thinks that this establishes that there must be perverted functioning on the part of these organs, leading to the production of protective ferments. This opens a new field for research, especially with hysteria, etc.

149. Pyelocystitis in Infants.—Kowitz has had 17 boy babies and 23 girl babies present pyelocystitis, and in every case there was some preceding acute alimentary disturbance, and the cases nearly all developed during the heated term. This suggests that the affection is of blood-borne origin. He found the colon bacillus in pure cultures in the urine in 34 cases, associated with other bacteria in the others. Three of the infants had furunculosis or eczema, and staphylococci were found in these. No benefit was apparent from any drugs; the main reliance must be on copious intake of water, especially given by the drop method in the rectum or by subcutaneous infusion.

151. Friedmann's Remedy for Tuberculosis.—This editorial states that never in the history of medicine has there been such a unanimous verdict of repudiation of an alleged curative measure as is the case with Friedmann's remedy. The matter seems to have been definitely settled for the present by the open discussion through four meetings of the Berliner med. Gesellschaft and at the discussion in the Vienna K. K. Gesellschaft der Aerzte. The general verdict is that on account of the lack of any pronounced curative action from it and of the dangers connected with it, its use is warned against. The editorial concludes with the statement that as the matter seems now definitely settled, no more space will be devoted to it in future.

Therapeutische Monatshefte, Berlin

June, XXVIII, No. 6, pp. 389-468

152 *Drug Treatment of Blood-Diseases. (Fortschritte der medikamentösen Therapie bei Blutkrankheiten.) P. Morawitz.
153 Radiotherapy in Internal Medicine. (Die radioaktiven Methoden in der inneren Therapie.) E. Freund.
154 *Constitutional Factors to be Considered in Treating Tabes. (Konstitutionelle individualisierende Tabestherapie.) R. Stern.
155 *Puncture in Pericarditis with Effusion. (Zur Punktion grosser Herzbeutelergüsse.) O. Moog.
156 Personal Experiences with Small-Pox. Volland.
157 Whey-Albumin-Milk for Infants. (Quarkfettmilch—ein weiterer Ersatz der Eiweissmilch.) E. Aschenheim.
158 *The Flooding of the Drug Stores with Proprietaries. (Die Ueberfüllung der Apotheke mit Spezialitäten.) W. Heubner.
159 *The German Council on Pharmacy and Chemistry. (In eigener Sache.) W. Heubner.

152. Drug Treatment of Blood-Diseases. — Morawitz remarks in the course of this review of recent progress, that iron is useless as a rule in pernicious anemia. There is always abundance of iron on hand from the destruction of reds going on. It is also futile to give iron to young girls whose pallor suggests anemia but is in fact the result of nervous influences. He says of benzol that no permanent cure has yet been recorded from its use, yet it gives us another weapon against leukemia. But it must not be forgotten that it is a two-edged sword, more so, perhaps, than Roentgen treatment. The symptoms of acute leukemia subsided under thorium in a case in his own experience. The discovery that calcium renders the walls of the vessels less permeable suggests its use in hemorrhagic conditions secondary to infections, leukemia and severe anemia, but he has seen no benefit from it in tuberculous hemoptysis.

154. Constitutional Predisposition to Tabes.—Stern remarks that some of the symptoms in tabetics which are credited to the tabes are in reality due to constitutional inferiority in some line, and this is also the cause of the apparently casual involvement of the optic nerve, the bladder or the motor functioning in different cases. He found evidences of constitutional asthenia in nearly 50 per cent. of all his cases of tabes. These asthenic factors should be regarded in treatment, building up the patient just as we build up those with incipient tuberculosis so they can throw off the disease. Otherwise they display an ominous tendency to anemia, emaciation and wasting away. The syphilitic basis of the tabes is combated in treatment and nothing is done, as a rule, to combat the constitutional inferiority. Stern adds that a further 35 per cent. of his tabetic patients were abnormally stocky, and the elderly were inclined to obesity, the trunk uncommonly hairy—a type corresponding to deficient functioning of the thyroid. This degenerate stocky type is found more frequently among patients with general paralysis than among tabetics. It suggests a hint for treatment. He warns that iodin should not be given to this class of *breitwüchsige* tabetics or paralytics. His record of 85 per cent. of either the asthenic or emphysematous type of patients in his cases of tabes has convinced him that tabes should be designated "spinal syphilis with constitutional inferiority, predominantly of the asthenic type."

155. Puncture of Large Pericarditic Effusions.—Moog adds another to the four cases on record (Curschmann) in which very large effusions were tapped from the rear. Moog punctured the pericardium through the fifth left interspace in front and evacuated 130 c.c. of hemorrhagic fluid; two days later 90 c.c. was evacuated in the same day. The symptoms from compression of the lung soon returned but two punctures at different points brought no fluid. Then he introduced the needle from the rear, puncturing the eighth interspace, and released 600 c.c. of the effusion and the same amount the next day, and 400 c.c. five days later. Air got in during the later maneuvers and a pneumothorax developed with some effusion in the pleura, but this gradually subsided and with it all the other symptoms to complete clinical recovery. The possibility of pneumothorax should always be borne in mind and the effect on the other lung.

158. The Flooding of the Drug Stores with Proprietaries.—This is the title of an article by a pharmacist, published in the *Pharm. Ztg.*, 1914, p. 306, deploring the present overproduction of pharmaceuticals, and the claims made for them in the advertising. He states that "fully 50 per cent. of the preparations advertised have no excuse for existence, and certainly not the foreign ones, but no paper or periodical can be taken up without seeing their advertisements. And the press, even every sheet of paper on which anything is printed, is looked up to by the average public as an oracle." He adds "not only in the interests of pharmacists but for the welfare of honest business, laws should be enacted to put an end to the abuses in the advertising columns of the daily papers at least." Heubner comments on this that not merely 50 per cent: but 90 or 95 per cent. of the existing proprietaries have no justification for existence—"if thirty to fifty new ones came out every year this would amply satisfy the requirements of therapeutic progress, but now we groan under ten or twenty times this burden."

159. **The German Propaganda for Reform.**—See Propaganda Department in The Journal, June 13, 1914, p. 1910.

Wiener klinische Wochenschrift, Vienna

June 4, XXVII, No. 23, pp. 785-832

160 Experimental Syphilis in the Rabbit. L. Arzt and W. Kerl.
161 *Tendency to Hemorrhage in the Tuberculous. H. Faschingbauer.
162 *Percutaneous Tuberculin Treatment. (Tuberkulineinreibungen.) A. Kutschera.
163 Vaccine Therapy of Mixed Infection in Tuberculosis. O. Frankfurter.
164 *The Abderhalden Reaction in Differential Diagnosis. (Zur diagnostischen Verwertbarkeit des Dialysierverfahrens.) K. Csepai.

161. **Hemorrhagic Tendency in Tuberculosis.**—Faschingbauer states that among 1,261 cases of tuberculosis in the course of five years he encountered six in which there was an unmistakable hemorrhagic diathesis. He describes them in detail and bids others heed the warning that purpura for which no other cause can be discovered may be the first or among the first manifestations of latent tuberculosis. It may appear at any stage of tuberculosis and recur; it seems to accompany an acute form of tuberculosis or an acute exacerbation. It is probably due to the flooding of the organism with the toxins of the tubercle bacillus.

162. **Percutaneous Tuberculin Treatment.**—Kutschera has the patient drop the tuberculin on his skin and rub it in with his thumb until it has all disappeared. This method has proved particularly practical and effectual in some convents in his charge where 600 nuns have been taking this tuberculin treatment. It has demonstrated its usefulness in protecting against the flaring up of latent tuberculosis, but he advocates the more potent subcutaneous technic, when the disease is already manifest. The percutaneous method is especially adapted for members of families exposed to tuberculosis, for large institutions, etc., as it is so simple and inexpensive that it can be applied on a wholesale scale. He begins with one drop of a 1:25 dilution of the tuberculin once a week. The dose is increased by one drop each for four weeks. When the four-drop dose has been reached he changes to a 1:5 dilution and so on, finally using one drop of pure tuberculin up to four drops. The treatment must be kept up for two years after the last manifestations have subsided. The inunction is made at a different point each time. Once a month or three months is generally often enough for medical supervision.

164. **Serodiagnosis of Pregnancy and Internal Disease.**—Csepai reports that the organs of animals elicited equally specific responses as human organs in his research on Abderhalden's ninhydrin reaction. Thymus tissue seems to be digested in nearly all affections; hence this has no diagnostic import in exophthalmic goiter, etc.

Zeitschrift für Geburtshülfe und Gynäkologie, Stuttgart

LXXVI, No. 1, pp. 1-320. Last indexed May 2, p. 1443

165 *Tetanoid Symptoms in the Pregnant. P. Kreiss.
166 *Loss of Blood at Gynecologic Operations, and Its Importance for Prognosis. P. Kreiss.
167 Contagious Pemphigus Neonatorum. E. Reinhardt.
168 Papilloma on Ovary. O. Hahn.
169 Bacterial Content of Urine in Pregnancy. (Keimgehalt des Urins Schwangerer.) K. Kurihara.
170 Changes in Metabolism during Pregnancy. (Eiweiss- und Mineralstoffwechseluntersuchungen bei der schwangeren Frau nebst Tierversuchen mit bes. Berücksichtigung der Funktion endokriner Drüsen.) E. Landsberg.
171 The Blood in Obstetric and Gynecologic Patients. (Eisengehalt, Hamoglobin und Blutkörperchenvolumen.) M. Maier.
172 Lipoids in Genital Organs. (Vorkommen doppeltbrechender Lipoide in menschlichen Ovarien und Uteris.) S. Adachi.
173 Calcium Content of Blood. (Kalkgehalt des menschlichen Blutes bes. beim Weibe.) N. Voorhoeve.
174 *Treatment of Third Stage of Labor. (Nachgeburtsbehandlung und manuelle Placentalösung.) F. Ahlfeld.
175 *Fixation Abscess in Treatment of Puerperal Infection. E. Santi.
176 Closing up of Botalli's Duct after Birth. G. Linzenmeier.
177 *Formation of Vagina out of Rectum. (Ersatz der fehlenden Scheide durch Implantatio recti.) P. Strassmann.

165. **Tetanoid Symptoms in the Pregnant.**—Kreiss states that he found the Chvostek sign positive and also the facial nerve abnormally irritable in 80 per cent. of 75 parturients and in 60 per cent. of 50 pregnant women. He thinks that this indicates insufficiency on the part of the parathyroid glands.

166. **Loss of Blood at Gynecologic Operations, and Its Importance for Prognosis.**—Kreiss has been impressed with the importance for the ultimate outcome of the amount of blood lost during an operation. One patient succumbed to this alone he is convinced. He now makes a point of operating on women only between two menstrual periods, ligating the vessels with scrupulous care, and being particularly cautious in drawing the bladder aside. When there has been considerable loss of blood he makes a subcutaneous injection of a grape-sugar solution to twice the amount of blood lost. He estimates the amount by Rübsamen's method and tabulates the findings, with the outcome, in forty-three abdominal and eighteen vaginal operations.

174. **Treatment of Third Stage of Labor.**—Ahlfeld compares the published statistics from a number of European maternities with the experiences at the Marburg maternity in his charge and declares that everything testifies to the advantages of expectant treatment. He reiterates that after delivery the first fifteen minutes belong to the woman alone; during the next fifteen both mother and child can be supervised. After this the mother must be inspected every five minutes and fresh linen placed under the vulva each time. The less the uterus is manipulated after expulsion of the child, the sooner and the more completely the placenta becomes detached and expelled with moderate bleeding in the true physiologic manner. Not until after an hour and a half or two hours should any attempt be made to remove the placenta which by that time should be lying low down in the vagina. Then slight pressure from without readily expels it and does no harm. With inspection every five minutes it is practically impossible for serious hemorrhage to surprise one.

175. **Fixation Abscess in Treatment of Puerperal Infection.**—Santi reports 12 cases of very severe puerperal infection in which he injected turpentine to induce aseptic suppuration and ascribes the favorable outcome in all but 2 cases to this measure. He injected from 1 to 5 c.c. and did not hesitate to repeat the injections up to three or five times. In a previous series of 18 cases he did not venture to go above 1 c.c. or repeat the injection, and he lost 6 of the patients. The reaction to the injection indicates the resisting powers of the organism and thus throws light on the prognosis. Even if it does not help, it never does harm and there are no contra-indications to the turpentine even in desperate cases, with the kidneys very pathologic; benefit follows even if it is only temporary.

177. **Formation of Vagina out of Rectum.**—This article is published in the society proceedings but it is illustrated with six colored plates showing the technic as applied in one clinical case with complete success. It is commended as exceptionally simple and easy. The abdomen is not opened, and the rectum seems to be much better suited for the purpose than any other part of the bowel. The segment of rectum resected for the new vagina starts 3 cm. above the anus. This end is sutured to the vulva. Then the upper end of the segment is cut and sutured to make the vaginal culdesac. The upper stump of the rectum is then mobilized and sutured to the anal stump and the simple operation is complete.

Zentralblatt für Chirurgie, Leipsic

June 13, XLI, No. 24, pp. 1017-1064

178 To Make New Outlet for Parotid Gland. (Ueber die Möglichkeit, der Parotis durch interglanduläre Anastomose der Parotis- und Submaxillardrüse einen kollateralen Exkretionsweg zu schaffen.) G. Ferrarini.
179 Folding Splints for the Battle Field. (Dreigeteilte Extremitäten-Transportschienen für den Krieg.) P. L. Friedrich.

Zentralblatt für Gynäkologie, Leipsic

June 13, XXXVIII, No. 24, pp. 865-896

180 The Hemolysis of Streptococci May Be a Pregnancy Reaction. (Die Hämolyse der Streptokokken eine Schwangerschaftsreaktion?) W. Benthin.
181 Cure of a Pregnancy Toxic Dermatosis by Injection of Ringer's Solution. S. F. Roos.
182 Hypophysis Extract and Atony of the Uterus. H. Oppenheimer.

Gazzetta degli Ospedali e delle Cliniche, Milan

XXXV, Nos. 69-72, pp. 729-768

183 Echinococcus Disease of the Lungs; Five Cases. A. Chelini.
184 Traumatic Appendicitis. G. Rosica.

Riforma Medica, Naples

June 6, XXX, No. 23, pp. 617-644

85 Leukocytosis from Cold. (Sulla leucocitosi da freddo. Considerazioni e indagini sperimentali.) A. Rovighi and R. Secchi.
186 *Primary Gastric Sarcoma. G. Forni.

186. **Primary Gastric Sarcoma.**—Forni compares a case personally observed with 190 he has found on record. The majority of cases were in persons between 40 and 60 but some of the patients were over 90 and 2 were only 3. The course was longer than with gastric carcinoma. In 17 cases the tumor developed outside the stomach and 12 of the patients were cured by resection of the growth while only 3 were cured among the 20 with endogastric sarcoma given operative treatment. Among the cured cases were 10 of spindle-cell structure and 5 of round cell.

Brazil-Medico, Rio de Janeiro

May 15, XXVIII, No. 19, pp. 183-192

187 Helminth Found in Stomach of Cattle in Brazil. (Trichostrongylinae brazileiras. Hoemonchus similis, n. sp.) L. Travassos.

St. Petersburger medizinische Zeitschrift

XXXIX, No. 9, pp. 111-121

188 Myoma and Corpus Carcinoma in Same Uterus. H. Jansen.
189 Double Monsters and United Twins. (Ueber Doppelmissbildungen, nebst Mitteilung über eine menschliche Doppelbildung aus der dritten Embryonalwoche.) B. Ottow.

Russky Vrach, St. Petersburg

XIII, No. 8, pp. 253-288

190 *Surgery of the Spleen. (O chirurgie selezenki.) B. K. Finkelstein.
191 Supernumerary Spleen. (O polisplenic.) A. T. Brandt.
192 *Fusiform Bacilli in Scarlet Fever. V. N. Klimenko.
193 Successful Cultivation of Tissue Cells outside the Body. M. A. Sheremetzinskaia.
194 *Azotemia in Nephritis. V. V. Ovsiannikova. Commenced in No. 1.
195 Pathogenesis of Diabetes Mellitus. A. T. Ekkert.

190. **Surgery of the Spleen.**—Finkelstein relates that he has operated on the spleen in 66 cases. The mortality with stab-wound, cancer and echinococcus cysts was 20 per cent. and with gunshot wounds 50 per cent. About 20 per cent. of his patients succumbed to their injury. A ruptured spleen must be removed without fail. Abscess of the spleen gives a good prognosis if the operation is done early, and he found the best method to be through the pleura. Operative correction of a movable spleen gave constantly good results. The outcome of splenectomy was favorable in Banti's disease, splenic anemia and in certain stages of malaria. The operation may not be advisable, however, in case of extensive adhesions and severe changes in parenchymatous organs. He adds an extensive bibliography classified according to the reasons for operative treatment.

192. **Fusiform Bacillus in Scarlet Fever.**—Klimenko found fusiform bacilli in the spleen and liver in five out of seven cadavers of children who had died from scarlet fever. In all these five patients there was a necrotic angina. The cultures were made with Schereschewsky's medium, plus half-coagulated horse-serum, kept at 37 C. for forty-eight hours; one part of serum and two parts of agar also may be used. Systematic bacteriologic examination of the throats of scarlatinal patients invariably showed the presence of fusiform bacilli, usually with other microbes, and microscopic sections from the gangrenous places also showed the fusiform bacilli and streptococci. Klimenko comes to the conclusion that gangrenous scarlatinal angina is caused by invasion of fusiform bacilli, and also by streptococci which through the lymphatic spaces and vessels penetrate into the general circulation and are the probable causes of the fatal hemorrhages occurring in scarlet fever, and of gangrene of the esophagus, otitis, abscesses and mastoiditis. The best remedy in this dangerous form seems to be neosalvarsan which he successfully used in 3 cases of scarlet fever with necrotic angina and severe general infection. The beneficial effect of neosalvarsan also speaks in favor of the rôle played by fusiform bacilli in the etiology of scarlatinal necrotic angina. The neosalvarsan was given intravenously, 0.15 c.c. to each 10 kg. of the patient's weight; three doses in five days, a total of 0.892 gm. in the one case described in detail.

194. **Azotemia in Nephritis.**—Ovsiannikova determined the nitrogen content in the blood of 57 patients with chronic nephritis during attacks of uremia or during the free intervals, but always before meals. The normal standard for residual nitrogen in the blood was assumed to be 0.33 per thousand; for urea, 0.48 to 0.5 per thousand. The patients are classed in four groups. The first group with normal rate of urea (0.5 per thousand) comprised 11 patients and 18 per cent. of them died. The second group (with 0.5 to 1 per thousand), 27 cases and 18 per cent. died. Of the 12 patients in the third group (with 1 to 2 per thousand urea), 58 per cent. died. In the fourth group of 7 patients (with from 2 to 5 per thousand urea), the mortality was 85 per cent. Thus the higher the blood content in nitrogen (urea) the graver the prognosis, 2 per cent. already indicating a severe anatomic kidney lesion. In acute nephritis, however, large quantities of urea in the blood do not have this significance and may prove innocuous.

Hospitalstidende, Copenhagen

June 10, LVII, No. 23, pp. 737-768

196 No Benefit Observed from Serum of Thyroidectomized Animals in Treatment of Exophthalmic Goiter; Eighty Cases. (Har Antithyreoidin specifik Virkning overfor Mb. Basedowii?) C. Sonne. Commenced in No. 22.
197 Dyspepsia with Chronic Alcoholism. I. F. Vogelius.

Ugeskrift for Læger, Copenhagen

May 28, LXXVI, No. 22, pp. 997-1040

198 *Connection between Alcoholism and Morbidity. (Om Forholdet mellem Alkoholisme og Sygelighed.) P. Heiberg.

198. **Connection between Alcoholism and Morbidity.**—Heiberg presents an array of tabulated statistics which demonstrate anew the waste of health and time—not to mention money—which results from drinking habits. The conditions in the large cities, small towns and in rural districts are compared especially as regards men between 35 and 55. The morbidity in this class in the cities is twice that of the rural districts, and the figures are the same as for women of the same age. Heiberg thinks that alcohol is responsible for most of this excess male morbidity in the cities. The number of days of disability on account of disease was found 50 to 100 per cent. more for the men in the cities. This he computes to represent a loss of 600,000 working days, and he presents figures to show that for one-third of this at least alcohol is responsible. It does not enter appreciably into the morbidity from acute infectious diseases, and here there is little proportional difference between the figures for the cities and the rural districts.

Upsala Läkareförenings Förhandlingar

XIX, Supplement, pp. 1-408. Last indexed May 2, p. 1444

199 *The Proportion of Lymphoid Tissue at Various Ages: Research on Rabbits. (Den lymfoida väfnadens normala mängd hos kania olika postfetala åldrar. Bidrag till konstitutionsfrågan.) J. Hellman.

199. **The Lymphoid Tissue at Different Ages.**—This bulky number is devoted entirely to Hellman's monograph, with accompanying ten tables, a detailed summary in German, and a review of the literature on the lymphoid tissue from 1600 to date.

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THE CEREBROSPINAL FLUID AS A PROBLEM IN INTRACRANIAL SURGERY *

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The rapid strides that have been made in the evolution of modern civilization are almost past man's understanding. To the casual observer, the progress of recent times is attributed hastily to the material contributions of the master minds of the industrial world; but a more careful analysis will lead the seeker after truth out of the turmoil and the noise and bustle of the busy centers of population into the seclusion of the laboratory, where, in the quiet of their academic atmosphere, the chemist and the physicist, the geologist and the agriculturist, the psychologist and the pedagogue, the bacteriologist and the physiologist are working out the problems which make it possible for the human race — men, women and children — to live where conditions compel them to work, and not be mowed down by the cruel operation of the law of the survival of the fittest.

Would it ever have been possible to combat this law of Nature were it not for the accomplishments of the scientist? Could the spirit of the philanthropist embodied in the social worker have made the congested districts inhabitable, had it not been for the science of preventive medicine? The application of scientific principles to agriculture will alone make it possible to feed the ever increasing population from the products of the soil. Was it the builder or contractor, or a disciple of the Taylor system of scientific efficiency that revolutionized the bricklaying industry, which had changed not one iota in all the centuries that have elapsed since the building of the pyramids until the present decade? Who would have dreamt at the time of the Spanish-American War that the dreadful sacrifice of countless lives might have been avoided by vaccination, or that the mortality of the infested zone of the Isthmus of Panama could be reduced below that of the wholesome surroundings of the rural districts of more northern climes?

Scientific discovery, the product of research, is the guiding-star in our modern civilization in matters of health and happiness, in conservation and productivity, in social welfare and social uplift. And what is true of all these is true, also, of the progress of surgery. It is not so long ago that the practical surgeon so-called looked with pity, if not with scorn, at the surgeon who endeavored to work out problems in the laboratory and not in the clinic. But who is there among you to-day that does not look with admiration and appreciation on the addition to knowledge that has been derived from the laboratories of Halsted, of Matas, of Crile, of Cushing, of Carrel and of Sweet? Through blundering errors and at the cost of human life the clinician may hit on truths which might have been solved at less cost in the experimental laboratory. Surgery has won its place as a scientific branch of medicine, and the hidden truths, on which will depend the progress of surgery as of all other human attainment, will be the product of the surgeon in his rôle of trained investigator.

The subject taken for the topic of this address is the cerebrospinal fluid as a factor in the problem of intracranial surgery. This topic is one of absorbing interest, as well as of great practical moment. It is one with which the surgeon must reckon in the diagnosis, the prognosis and the treatment of most intracranial lesions, and cannot be disregarded in any operative procedure. I shall present facts gleaned in part from literature, but in large measure from personal observations in the clinic and experimental laboratory.

Meningitis.—Illustrative of the part played by the cerebrospinal fluid in intracranial lesions, let us cite, for example, meningitis: its pathologic factors and its clinical syndrome. In meningitis there are two pathogenic factors: first, infection through the invading micro-organism, and, second, the increased intracranial tension. The increased tension in its clinical expression is analogous to the increased tension of sources other than infectious, as in cases of intracranial trauma and tumors. Whatever may be the nature of the infection or its effect on the meninges and cortex, there does exist a resulting increased tension in the cerebrospinal fluid and ultimately disturbance in its circulation and absorption. In their series of experiments, Kopetzky and Haynes demonstrated the analogy of experimentally induced increased intracranial tension and that due to infection of the meninges by pathogenic micro-organisms. While it is true that the fatal outcome of many cases of meningitis is due to the metabolic action of the particular micro-organism on the meninges and cortex with the production of certain toxins and ptomains, it is also true that in cases of otitic meningitis the progress of the disease has been arrested after drainage by ventricular puncture or lumbar puncture when the examination of the fluid failed to demonstrate the existence of micro-organisms.

In meningitis, then, there is an increase in cerebrospinal fluid and edema of the brain. There results an increase in pressure which so interferes with the blood-supply that the function of the vasomotor, respiratory and cardiac centers is disturbed, and the alarming picture of intracranial pressure asserts itself. It is significant that this increased pressure is the determining factor, as often perhaps as the specific action of the bacteria. The part played by the cerebrospinal fluid in meningitis is, therefore, a major one and the treatment of meningitis should comprehend some means of controlling the intracranial pressure as well as the microbic activity.

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* Chairman's address, read before the Section on Surgery at the Sixty-Fifth Annual Session of the American Medical Association, Atlantic City, June, 1914.

Hydrocephalus.—The study of the physiology of the cerebrospinal fluid in relation to congenital hydrocephalus offers another fruitful field for study. In the two thousand years which have elapsed since Hippocrates first tapped the ventricles, not a substantial contribution has been made to the etiology of hydrocephalus. The question whether or not hydrocephalus is due to a lesion of the absorptive mechanism is, even to-day, absolutely in the domain of speculation. We are told that it may be due to traumatic or psychic disturbances during pregnancy, to toxic or infectious disease of the parent, such as alcoholism, tuberculosis or syphilis, or that there may be a degenerative process of the capillaries in the ventricular wall (Weber); but there has never yet been revealed by necropsy or otherwise a constant pathologic factor which gives us a clue as to the etiology, prevention or treatment. Despite the seriousness with which the originator of some new method of treating hydrocephalus takes himself, we feel almost like apologizing for the multiplicity and variety of surgical procedures that have from time to time been recommended, so many have been the disappointments, so many the failures.

Brain Tumors.—Again, the relation of cerebrospinal fluid to brain tumors is an absorbing topic. We attribute to the new growth those symptoms of brain tumor which are the result of increased intracranial tension, but, as a matter of fact, in most instances the increased intracranial tension is the result of the excessive accumulation of cerebrospinal fluid in the ventricles, in the basal cysternae, or throughout the subarachnoid space. Evidence of intracranial tension is absent when there is no excessive accumulation of fluid in the distended ventricles or the basal cysternae. I supported this statement with numerous illustrations from my clinic in a paper presented to the Philadelphia Neurological Society.[1] This general rule holds good whether the tumor be a glioma or an endothelioma; whether it be cortical, subcortical or basal. What is true of pretentorial lesions is true also of subtentorial lesions. The truth of this statement is readily demonstrated on the operating-table. If, with pretentorial tumors, there is excessive tension, the tension will subside when the cerebrospinal fluid is withdrawn by tapping directly the ventricles, or by lumbar puncture. Similarly, in posterior fossa tumors, the evacuation of fluid from the basal cysternae is invariably followed by the immediate decrease of tension.

The extraordinary rapidity with which the cerebrospinal fluid reaccumulates after evacuation is worthy of mention. I had an opportunity in a case of tumor to tap the ventricles through an opening in the skull on several occasions when I withdrew from 60 to 150 c.c. of cerebrospinal fluid, from two to five times the normal content of the ventricles, only to find the fluid replaced within the space of twenty minutes. Palliative treatment in the case of brain tumors becomes then a problem of dealing with the excessive accumulation of cerebrospinal fluid, and the important question at once arises: Shall temporal decompression as a palliative procedure be altogether supplanted by the Anton puncture of the ventricle through the corpus callosum? This method at once strikes at the root of the trouble and offers an outlet and an area of absorption for the fluid in the distended ventricles. In this manner, tension is relieved and a definite method adopted to prevent its immediate recurrence.

The cerebrospinal fluid was mentioned first by Coligno in 1764, who thought it present only after death, and later Haller found it in the spinal cord, but without realizing that there was any relation between the fluid in the cord and that in the ventricles. It was not until 1840 that the connection between the ventricles and the subarachnoid spaces was revealed by Magendie through his description of the foramen which bears his name. .

Well known as are the physical characteristics of cerebrospinal fluid in health and their variation in disease, we are still in the dark as to its function, and as to the manner in which the secretory and absorptive balance is maintained in health, and is disturbed in disease. The cerebrospinal fluid has no analogy in the body; it is wholly different on the one hand from lymph and on the other from the liquid found in serous cavities, as of the pleura and peritoneum. Because of the communication between the perivascular sheaths and the pericellular and perineural spaces, there are some who believe that the cerebrospinal fluid plays a part in the nutrition of the brain cells.[2] Some regard it as a means whereby the delicate balance of intracranial pressure is preserved; others, again, as Dixon and Halliburton, believe that it affords the central nervous system an additional mechanism for eliminating carbon dioxid from the brain: as urea increases the renal flow, so carbon dioxid increases the cerebrospinal secretion. While we know that the cerebrospinal fluid is a secretion, we have at the same time found from repeated examination of fluid discharged in large quantities that the solids in the fluid diminish materially in quantity, so that there is reason for suspecting that under abnormal conditions the fluid may be of the nature of a transudation.

The cerebrospinal fluid fills all the space of the cranial cavity not occupied by the vessels and nerve-tissues; and, by equalizing pressure, adjusts the mechanism of the circulation of the nerve cells. Under normal conditions, we find the pressure registers 100 mm. of water, or with the mercury manometer, which I prefer, about 6 mm. Natural variations from the normal occur during inspiration and expiration, the former lowering, the latter raising it, as the blood is dammed back from the right auricle and vena cava into the cerebral sinuses. The pressure is believed by some to be equal to or a little greater than that of the venous pressure. This relation of cerebral venous pressure to the pressure of the cerebrospinal fluid, we have been able to demonstrate a number of times in our experiments. On clamping one internal jugular vein, there is no change in pressure, but when both veins are clamped, the pressure rises 20 mm. in five seconds. When both internal jugular veins are closed, and first one external jugular and then the other is clamped, the pressure rises 10 mm. and 40 mm., respectively, within ten seconds. This bald statement on the relation of the venous to the cerebrospinal pressure is of considerable import when taken in relation with the problems of absorption and confirms the observations which have been and are being made to prove that the greater part of the fluid is taken up by the venous, rather than by the lymph, channels.

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[1] Frazier, C. H.: New York Med. Jour., June 27, 1914.

[2] This is still open to question, as His, Sicard and others believe that the true lymph channels of the brain are separate from the perivascular sheaths. (Ferrier: Lancet, London, Oct. 18, 1913.)

THE PRODUCTION AND ABSORPTION OF THE FLUID

Every pathologic state of the cerebrospinal fluid implies an increase in quantity. So far as we know, there are no pathologic conditions in which the symptoms are the result of a diminution in quantity of cerebrospinal fluid, whereas, as we have already shown, there are many diseases in which the increase in fluid is a dominant factor. Any increase in fluid above the normal implies a disturbance of balance between absorption and secretion, so that an understanding of these two processes is essential before it will be possible to adjust the disturbed balance.

By the injection of various dyes into the subarachnoid space, we have been able to demonstrate positively that the lymphatic system plays a very insignificant part in the problem of absorption of the cerebrospinal fluid. One may trace the avenue of absorption through the nerve-sheaths, chiefly of the olfactory and optic nerves, thence to the posterior part of the eyeball, and to the mucous membrane of the turbinates and septum, to the posterior lymph-nodes of the nasopharynx, to the parotid and deeper cervical chain and thence to the thoracic duct. Usually, it took twelve hours for the stain to reach the lower glands. While, therefore, absorption does take place by the lymphatics, the course is roundabout and the process relatively slow.

A better method of studying absorption, we found in the use of phenolsulphonephthalein (an observation confirmed by the work of Dandy and Blackfan) which, when injected into the ventricles, appears in the torcular herophili in two minutes and in the veins in five minutes. As it takes almost twelve hours for the stained fluid to reach the cervical lymph-nodes and only five minutes for phenolsulphonephthalein to reach the veins, one sees that the cerebrospinal fluid is absorbed chiefly by the blood-channels.

Our studies of the process of absorption and secretion have been greatly facilitated through our producing an artificial hydrocephalus by blocking the fourth ventricle. If phenolsulphonephthalein is injected into a blocked ventricle, absorption is practically inhibited; even after two hours there appears only the slightest trace and this is not constant, whereas in the unobstructed ventricle the drug is recovered from the veins in five minutes. Furthermore, we have shown that from 50 to 60 per cent. of the amount of phenolsulphonephthalein injected may be recovered from the veins in two hours. Hence it is fair to assume that an equal quantity of cerebrospinal fluid may be absorbed in the same time.

While, therefore, it is an established fact that the cerebrospinal fluid escapes chiefly through the venous channels, one is still in doubt which of the veins or sinuses play the most important part. Key and Retzius asserted that the pacchionian bodies acted as filters, and, while this theory is not generally accepted because these bodies do not exist in very young children, the fact that hydrocephalus is more prevalent in infancy is at least suggestive to me that the pacchionian bodies play some part, be it large or small, in the absorptive process. Hill believes that the cerebrospinal fluid makes its escape from the veins opening into the longitudinal sinus between which and the subarachnoid space Adamkwiez claims there is a free communication. In relation to the part played by the longitudinal sinus, we found experimentally that when fluid was introduced under pressure into the cisterna magna of the posterior fossa, none of the fluid reached the cerebral cortex, and we attributed this phenomenon to the blocking of the isthmus of the tentorium cerebelli when the midbrain was forced upward by the artificial pressure. In this phenomenon, I take it, is an explanation of the greater frequency with which we find signs of increased intracranial tension in tumors of the posterior rather than of the anterior fossa. It is not of necessity the obstruction of the ventricles that causes their distention (for frequently the outlet to the ventricles is not blocked); but the distention is due to the interference with absorption that follows when the passage of the cerebrospinal fluid from the posterior fossa to the cerebral cortex is obstructed because the isthmus of the tentorium is blocked. Furthermore, the improvement which follows puncture of the corpus callosum, permitting the escape of cerebrospinal fluid directly from the dilated ventricle to the cerebral cortex, may be due to the greater facility with which the fluid may reach the longitudinal sinus.

The control of the production of cerebrospinal fluid is pregnant with possibilities, and the study of the formation of cerebrospinal fluid offers a fascinating problem for experimental research. Up to the present all therapeutic efforts have been directed toward finding an artificial outlet for the excessive fluid which accumulates in such diseases as serous meningitis, brain tumors and hydrocephalus. The meager results we know. I believe that the future may bring forth remedies which will deal with the problem of cerebrospinal fluid at its source, and control its output.

It is no longer a matter of speculation that the cerebrospinal fluid is the output of the cubical cells of the choroid plexus and is found within the ventricles, lateral, third and fourth. That it is a secretion has been proved by the histological evidence of Cavazzani, Mott and others, and is confirmed by the experimental data which I shall present.

Is it not true, then, that the choroid plexus must be looked on as a gland subject to a variety of influences like other glandular structures, some now well known, others to be revealed by continued research? The choroid has been described by Mott as a gland with an external secretion but with an internal destination—a mixed type of gland intermediate between a ductless gland and a gland with a duct; its formation being affected in an inverse manner, epithelial invagination for a gland with an excretory duct, ependymal invagination for the choroid plexus.

The suggestion of Stiles that ligation of the common carotid is an effective way of dealing with hydrocephalus implied that the activity of the choroid plexus or choroid *gland*, as I shall now call it, is diminished by limiting its blood-supply. If an analogy can be drawn between the thyroid and the choroid gland, Stiles' suggestion is not wholly illogical, since the control of hyperthyroidism by ligation of two thyroidal vessels is an undisputed fact. Unfortunately, however, this analogy of the two glands is not borne out by either our laboratory or our clinical experience. We have been able to obtain readings of the normal flow of cerebrospinal fluid by a suitable apparatus, attached to a cannula introduced into the subarachnoid space through the occipito-atlantal ligaments, and with these as controls, observed the effect of various circulatory disturbances, clamping first one, then both common carotids, one and both internal jugular veins. Curiously enough this interference with the larger vessels of the cerebral circulation had absolutely no retarding influence on the rate of secretion. This experimental evidence alone would seem sufficient to prove that the function of the choroid gland cannot be controlled by ligation as is that of the thyroid gland. But, as further evidence, I may refer to a clinical experience in the case of inoperable brain tumor with enormously distended ventricles. Decompression had failed to compensate for the tremendous increase in tension due to the distended ventricles, and an attempt was made prior to our laboratory investigation to influence the accumulation of fluid by gradual interruption of the carotid circulation. The ventricle was tapped before each ligation, and the time required for it to fill was noted. These observations were repeated after ligation, and the results were practically negative, in that after the withdrawal of from 100 to 150 c.c. of fluid before ligation and after ligation, the time required for the ventricle to refill was practically unchanged.

Further, continuing our search into the factors influencing the secretory activity of the choroid gland, we investigated the physiologic action of the saline extracts of certain glands, including the pancreas, spleen, kidney, testes, ovary, thymus, adrenals, liver and brain. Nearly all these, especially the spleen, liver, kidney and pancreas caused a greater or less fall in blood-pressure, and, coincident with this, a marked increase in the rate of flow of cerebrospinal fluid in proportion to the quantity of extract injected. Amyl nitrite produced a similar fall and a similar increase in the outflow of cerebrospinal fluid. Frequently, after this temporary increase, the rate of flow became slower or ceased altogether. This increase in the secretory output must be the result either of direct stimulation of the choroid gland or of the disturbance in blood-pressure. The fall of arterial pressure causes an increase in pressure and dilatation of the cerebral sinuses, which in turn forces the cerebrospinal fluid out of the ventricles. Further observations tended to confirm the latter theory rather than the theory of hypersecretion.

Some interesting facts have been brought out recently by Dixon and Halliburton,[3] who, with us, have been studying the effect of various substances on the cerebrospinal secretion. They found, for example, that pilocarpin caused a genuine increase in secretion, although they were doubtful whether it acted directly on the choroidal epithelium or its nervous mechanism. A slight increase followed the injection of brain extracts, but the most interesting of their observations was on the effect of an extract of the choroid gland. This caused a uniform increase in the cerebrospinal secretion. This increase is not due to altered vascular or respiratory conditions, but rather to the specific action of some substance on the secretory cells of the choroid gland. The precise nature of this substance is still undetermined, although, as Dixon and Halliburton suggest, it may be due to a hormone product of brain metabolism.

In beginning our experiments, we hoped to find a tissue or an extract which, when injected into the circulation, might have a retarding influence on the activity of the choroid gland. But, until recently, with all the substances investigated, the effect was a hypersecretion rather than a hyposecretion. It was not until we began to study the effects of the thyroid gland extract that we discovered a substance which had a specific inhibitory action on the choroid gland. When injected in sufficient quantities, the thyroid extract caused a temporary fall in blood-pressure, with the usual transitory increase in outflow of cerebrospinal fluid; but the significant and altogether unique effect was the prolonged period of decreased outflow which followed, for three or four hours, that is, to the end of the experiment. Even when such small doses as to cause little, if any, change in blood-pressure are injected, the diminution in the rate of choroid secretion is marked, so that we are led to the conclusion that the thyroid gland extract, when injected intravenously, has a specific inhibitory action on the choroid gland. We will continue these studies on the thyroid gland to determine which of its constituents is the responsible factor.

The cerebrospinal fluid, then, has an absorbing interest for the clinician. Not only must he reckon with it in the diagnosis of many intracranial diseases, but also he cannot ignore it when his constructive ingenuity may be taxed to devise measures of relief for such diseases. Of equal interest, however, are the problems of research for those who would reveal the secrets of the function of this fluid in which our brain cells are forever bathed.

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THE TREATMENT OF PLACENTA PRAEVIA *

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In the advance which the science of obstetrics has made in the last fifteen years, this serious condition with others of like importance, has received new consideration, and some changes have been suggested in its treatment.

At present we recognize that septic infection is quite as important in causing the death of the mother as hemorrhage or shock. It has also been repeatedly demonstrated that placenta praevia causes such a vascular condition of the cervix and lower uterine segment that forcible dilatation or vaginal cesarean section exposes the patient to great danger from hemorrhage and infection. Furthermore, so grave a complication as placenta praevia demands hospital facilities and the skill of experienced hospital operators.

My experience leads me to agree with the conclusions just stated, and I desire, in addition, to present this subject to you from the following point of view: Logically, placenta praevia is a variety of ectopic gestation. The normal location of attachment of the impregnated ovum during its greatest period of devel-

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[3] Dixon and Halliburton: Jour. Physiol., 1913-1914, xlvii, 215.

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opment is the wall of the upper expulsive segment of the uterus near the orifice of the fallopian tube from which it emerged. When the impregnated ovum remains in the graafian follicle, the fallopian tube or the upper wall of the uterus, its growth inevitably causes rupture and hemorrhage. The danger of septic infection, however, is primarily inconsiderable. When the impregnated ovum attaches itself below its usual site of development, hemorrhage is likewise inevitable because pregnancy must be terminated with dilatation of the cervix, and dilatation inevitably produces separation and bleeding. The danger of infection is equally great because pathogenic bacteria are frequently present in the vagina, and repeated examinations and manipulation must convey them to the placental site. Hence there are some conditions in favor of the patient with the upper variety of ectopic gestation as against the patient who has the low variety, or placenta praevia. From this point of view, that method of treatment will be most successful which controls hemorrhage with the minimum risk of infection.

Again, cases of placenta praevia may be, for purposes of treatment, divided into those in which hospital facilities are promptly obtained and those which are treated outside of hospital. In hospital cases, operations which the general practitioner cannot safely attempt may be undertaken with a fair chance of success. If ectopic pregnancy of the upper variety is of sufficient gravity to demand the services of a skilful operator, with hospital facilities if possible, ectopic gestation of the lower variety, or placenta praevia, is equally grave.

Let us consider first those cases which come under the care of the general practitioner of medicine and which cannot be conveyed to hospital.

Two important factors must be kept in mind under these circumstances:

1. Any vaginal hemorrhage in a pregnant woman is a symptom of danger and must not be neglected. Because hemorrhage from placenta praevia is accompanied by no pain, it is frequently neglected by patients.

2. In dealing with these cases the danger of infection must be kept prominently in view. Vaginal examinations and manipulation must be as infrequent as possible, and the use of the tampon should be avoided.

Without minute classification, placenta praevia may be divided into those cases in which the os is not entirely covered by placenta and in which the membranes can be reached, and those cases in which the membranes cannot be reached. In the hands of the general practitioner and in private houses, the best treatment in the first class of cases is to rupture the membranes as extensively as possible, when dilatation permits this maneuver. Tonic doses of strychnin are then given and the patient is allowed to deliver herself, or, at least, is made to force the presenting part down to the vulva before artificial delivery is undertaken. In this way hemorrhage and infection will be reduced to a minimum, and although the risk to the child is great the mother's safety should be first considered.

In complete placenta praevia, in the hands of the general practitioner in a private house, the Braxton-Hicks method of bringing down the leg and breech of the child as a plug should give the mother the best chance. To accomplish this, anesthesia, partial or complete, may be required. The placenta must be perforated by one or two fingers, combined version performed, and the leg seized and drawn through the placenta. Only sufficient traction should be made to bring the breech firmly into the pelvic cavity and against the cervix and placenta. Under no circumstances should forcible and immediate extraction be practiced. The life of the child should be disregarded in the interests of the mother. If a constant tension on the child is desired, a noose of bandage should be slipped about the child's ankle and a moderate weight attached. The mother may then be stimulated as required, care being taken to avoid the use of ergot and pituitary extract. Strychnin, atropin and digitalin hypodermatically, with salt solution injected into a vein or connective tissue, will be found especially useful. The mother demands constant observation until labor finally develops, and the fetus, if possible, is expelled spontaneously. In placenta praevia the practitioner must expect and be forewarned against post partum bleeding. The delivery of the child should be followed by the delivery of the placenta, irrigation of the uterus with a hot 1 per cent. dilution of liquor cresolis compositus or normal salt solution, and firm packing of the uterus, cervix and vagina with 10 per cent. iodoform gauze. If undue traction is avoided and spontaneous expulsion of the fetus secured, there will be no dangerous laceration of the cervix; but if undue violence has been employed the cervix may be severely torn, and severe or fatal hemorrhage may follow. Under these circumstances immediate suture of the cervix may be necessary.

In hospital practice, with the mother in good condition and the membranes available for rupture, the escape of the amniotic liquid may be followed by the introduction of a dilating bag through the rent in the membranes into the cavity of the amnion. This should be gradually distended to its fullest extent securing dilatation of the cervix with pressure on the placenta. When dilatation is sufficiently advanced the child may be delivered by forceps, in many cases advantageously, with a minimum risk to the mother and with a great reduction in fetal mortality.

When the membranes are not available for rupture, and when the cervix is resisting, because in a primipara it is poorly developed, or in a multipara has been altered by scar tissue from previous confinement, mother and child will obtain the best result by prompt resort to abdominal cesarean section. If the child is premature or dying or dead, from long-continued maternal hemorrhage, the placenta may be perforated by the fingers and combined version practiced and the child's body used as a plug to check maternal bleeding. Spontaneous delivery and uterine contraction must be secured in the manner already described.

If the child be living and in good condition, the cervix soft and dilatable, and the head presenting, with the patient in hospital, the obstetrician may elect to pierce the placenta and insert a dilating bag through it within the cavity of the amnion. This bag may be distended with antiseptic fluid, hemorrhage checked by pressure, and gradual dilatation of the cervix thus secured. With good dilatation the use of the forceps will sometimes secure a living child. In hospital practice, however, where the child is fully viable, mother and child will obtain the best results by abdominal cesarean section. At full term in hospital cases, whether the child be living or dead, the mother will obtain her best chance for recovery by the same method. Our experience in abdominal cesarean section for placenta praevia comprises seventeen cases. In these the membranes were not available and the placenta practically covered the entire internal os. In some of these patients the child was dead or dying and the mother exsanguinated. All were at or near term.

The method of operation consisted in opening the abdomen, turning out the uterus, incising it and immediately removing its contents. It was interesting to observe how completely hemorrhage ceased when the uterus was emptied. The uterine cavity was then thoroughly irrigated with hot sterile salt solution and packed firmly with 10 per cent. iodoform gauze carried through the cervix into the vagina. The uterus and abdomen were closed in the usual manner. The vagina was sponged out with mercuric chlorid solution and firmly tamponed with sterile or mercuric chlorid gauze. During the operation the patient received intravenous saline transfusion, and strychnin, digitalin and atropin were given hypodermatically. In exsanguinated cases the patient was kept in the Trendelenburg posture until reaction occurred, and external heat, rectal injection of stimulants and oxygen inhalation were used with success.

Of the seventeen patients three were especially exsanguinated through severe and repeated hemorrhages. All the mothers recovered. The maternal mortality was nil; the fetal mortality 40 per cent. There was no maternal morbidity except slow recovery incident to severe anemia. Infection did not develop.

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HYSTEROTOMY *

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Since 1912, when my paper on hysterotomy was read before this Section, I have had twenty-five cases in addition to the fourteen then reported in which I have done this operation. Thus far there has been no mortality and no complication, either immediate or remote, as far as I am able to determine. This experience has strengthened my conviction that an active surgeon engaged in pelvic work not infrequently encounters cases in which this operation is a distinct addition to his diagnostic and therapeutic resources; that its dangers and disadvantages are theoretical rather than real, and therefore that condemnation of the operation by those who have had no experience with it is but another instance of that false conservatism and adherence to tradition which has blocked the early adoption of many salutary measures.

The general indications for hysterotomy may be stated as (1) to establish a prompt and certain diagnosis when a reasonable suspicion exists of malignant disease of the interior of the uterus; (2) for the prompt termination of pregnancy in cases in which life is acutely endangered by the continuance of that condition.

Of the twenty-five operations during the past two years, fifteen were performed for indications of the first class and ten for indications of the second class. In other words, 60 per cent. of the operations were undertaken with the well-defined idea that some early neoplastic process was present in the interior of the uterus, and 40 per cent. because of danger to life by reason of complications of pregnancy. The following is a brief summary of the findings. In two cases a single myoma was found in a pregnant uterus. I could not determine to my own satisfaction whether or not the enlargement of the uterus was due to pregnancy or to a submucous fibroid. A hysterotomy revealed pregnancy which was then terminated. It demonstrated however, that the uterus was normal except for a single myoma, which was enucleated and the woman thus was saved from the more mutilating and dangerous operation of hysterectomy, not to mention the preservation of her sexual functions. In two cases incision of the enlarged symmetrical uterus showed a single submucous myoma, which was enucleated and the uterus after repair left *in situ*.

In one case of symmetrically enlarged uterus, incision showed multiple intramural fibroids and a hyperplastic state of the endometrium. This was sufficient indication for removal of the uterus. The microscope showed a chronic interstitial metritis in addition to the gross changes.

In six cases of irregular bleeding leading to a suspicion of malignant disease the incision showed in three degenerated products of conception, and in three partial separation of the placenta.

I am willing to debit these cases against the operation, for I would not by design open the uterus intra-abdominally for these conditions. Unfortunately, however, I cannot always tell a pregnant uterus when I have it in my hands, much less diagnose the condition by signs and symptoms in the very early months. If there is any one in the world who has this phenomenal ability let him cast the first stone.

In two cases of premature separation of the placenta there was good reason to suspect placenta praevia, which I consider an absolute indication for hysterotomy.

One case of chorio-epithelioma in very early stage was revealed by this incision. A brief history may be of interest.

A woman 32 years of age was taken ill six months before admission with pain in the left iliac region radiating to chest and back. At intervals she has had return of this pain, which for the past two months has become much more severe. A leukorrheal discharge, frequently blood-stained, was constantly present. The hemoglobin was 70 per cent. The uterus reached 4 cm. above the pubis. At operation the uterus presented no external abnormality. By hysterotomy the products of conception were removed and a friable ulcerated area seen on the posterior wall. The uterus was removed. Microscopic examination showed chorio-epithelioma.

In one case a very early carcinoma was detected in the extreme left cornu. The patient was a woman aged 54, who had been bleeding irregularly for two years. During the past three months the flow had become much more profuse. There was no pain. Examination was negative. At operation the uterus was small and the appendages appeared normal. Hysterotomy was done. In the left cornu a friable ulcerated area was apparent. Malignancy was suspected and the uterus removed. The microscopic examination revealed an early adenocarcinoma at the suspected area.

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* Read before the Section on Obstetrics, Gynecology and Abdominal Surgery at the Sixty-Fifth Annual Session of the American Medical Association, Atlantic City, N. J., June, 1914.

In ten cases hysterotomy was done for the urgent necessity of terminating pregnancy. In one case of contracted pelvis with the fetus at term the classical cesarean section was employed, both mother and child being saved. Concerning this type of hysterotomy fortunately there is now no noteworthy difference of opinion. The simplicity and safety of the operation, however, are still not thoroughly appreciated, owing to the fact that there is a considerable statistical mortality. When it is realized that this mortality is almost wholly due to depletion of the patient's powers by unavailing attempts at delivery by other means, together with the subsequent infection that attacks a large percentage of women so mistreated, the operation will be more often performed as a primary procedure and the maternal mortality will approach the vanishing-point while many more children will be saved and disabling birth injuries avoided.

In one case of toxemia of pregnancy with eclampsia at six months delivery was effected by hysterotomy. The child was not viable, but the mother, who was only 20 years old, recovered promptly. This operation was done in February, 1913. The patient is now in the eighth month of a second pregnancy, the course of which is proceeding uneventfully without signs or symptoms of toxemia.

Hysterotomy is not advised for all cases of toxemia of pregnancy. There are few serious conditions the onset of which can be detected so readily as this. Undoubtedly palliative treatment should be instituted at the outset on the first indication of nephritis, increased blood-pressure, digestive or visual disturbances. If toxemia increases in spite of treatment it is, in my opinion, an absolute indication for the termination of pregnancy. If the condition has been detected early there is ample time for the induction of premature labor. In neglected cases, however, and particularly in the event of eclampsia, the quickest, safest and surest method of dealing with the condition is by hysterotomy. It matters not for this discussion what is the nature and cause of the toxemia, for it is clear enough that pregnancy is at bottom responsible for it. The sooner pregnancy is interrupted the more quickly does the cause cease to operate. Moreover, hysterotomy is a rapid and safe means of delivery, making but little demand on the vital powers of the patient, which can by no means be said of *accouchement forcé* or of the methods of induction of premature labor. Naturally, in the late cases there will be a mortality under any method of treatment, owing to irreparable damage to the essential organs, but that procedure which at once relieves the underlying condition and makes least demand on the vital powers of the patient should certainly be the method of choice.

In three cases of placenta praevia delivery was by hysterotomy. The duration of pregnancy was three, five and six months, respectively. In two cases the attachment of the placenta was marginal and in one central. In all I have performed hysterotomy in eight cases of placenta praevia without maternal mortality. The absolute command of hemorrhage which the surgeon has during the operation of hysterotomy is sharply contrasted with the danger from bleeding under the more common procedures of operative obstetrics. Shock is less and the liability to infection is certainly not greater. Under proper circumstances for laparotomy there can be little excuse for flirting with death by the uncertain methods so largely in vogue.

In five cases I emptied the uterus by hysterotomy because of a severe renal infection amounting to sepsis. Simple pyelitis is not an indication for hysterotomy. Palliative measures or local treatment will in most instances effect a cure. When, however, the general condition is alarming, this operation will give the most rapid and happy results. In one case, actuated by conservatism, I refused to empty the uterus, a decision which later I regretted, as the unfortunate woman in her debilitated condition contracted a severe puerperal infection from the effects of which she died. When a septic focus exists in the body with consequent infection of the blood-stream, there is grave danger of auto-infection of the uterus after childbirth. The circumstances of the patient must be considered among the indications for the termination of pregnancy under these conditions. When the patient is able to command good treatment and hygienic surroundings, every effort should be made to carry her through to term. A patient of the poorer classes, however, who has to look forward to some months of advancing pregnancy in a septic state that does not yield to such treatment as can be carried out and maintained, is entitled to have her life considered the paramount issue.

Let us now examine the net results in the twenty-five cases treated. There was no mortality. The morbidity was only that of an ordinary laparotomy. There was but one complication, a wound infection, not properly chargeable to the hysterotomy, as the uterus itself was uninfected. Only three uteri were sacrificed, one each for carcinoma, chorio-epithelioma and myoma of the uterus associated with chronic metritis and endometritis. One eclamptic patient was cured and is again normally pregnant. In one case of contracted pelvis treatment was successful for mother and child. Five patients with partial separation of the placenta were relieved and three patients with placenta praevia were snatched from imminent danger. In the remaining cases, while the operation was not life-saving, yet in its results it challenges any other form of treatment yet devised.

That the operation is not in itself dangerous is shown by the absence of mortality in this series and corroborated by the experience of Russell of Johns Hopkins, who, in 1905, reported thirty-two cases without death. Dickinson in an excellent article on diagnostic hysterotomy with a summary of twenty-seven cases expressed great satisfaction with the operation, but did not state definitely whether he had had any mortality. Howard Kelly, in a personal communication, states that he has performed hysterotomy in about sixty cases without mortality from the operation. From memory he speaks of a case similar to some of my own, which gave him particular satisfaction. This was an instance of single submucous myoma, not palpable but productive of excessive flow, pain and ill health. The patient had been condemned to a radical operation, but by hysterotomy and removal of the submucous myoma the size of a hickory-nut she was cured and has remained so for ten years. A considerable number of sporadic cases exist in the literature and were encountered in the preparation of this article. While no attempt at completeness was made, it was noteworthy that not a death was reported as following the operation. To Russell's opinion that "suprapubic hysterotomy is of conspicuous service in cases of persistent uterine hemorrhage which is not controlled by any form of treatment and in which bimanual palpation of the pelvic organs has given an absolutely, negative diagnosis" I can give hearty assent. I believe, however, that its use may be extended with benefit, as in the cases here cited, and that the term may be advantageously employed to cover the incision of the uterus in the interest of the mother in the early months of pregnancy, the child not being viable.

Hysterotomy is destined to be of great service in the early diagnosis of cancer of the fundus of the uterus. There are many who maintain that surgery has reached its limit in the treatment of cancer of the uterus and that we must mark time until an improvement is brought about in diagnosis. In my opinion, surgery has not reached its limit until it has assisted in every possible way in the early diagnosis. I hear a great noise of many voices saying that we are now in possession of such a method in the curet and microscopic section. If I did not know the difficulties of thorough curettage, of the gathering and preparation of all the scrapings and the subsequent chance of failure to section the malignant area, I might be tempted to agree; but the mortifying experiences which I have had and which I have known the most competent and thorough men to have in attempting to scrape out the contents of a uterus, lead me to distrust the curet, which I fully believe is the most abused and over-rated instrument in the gynecologists' armamentarium. Four weeks ago a woman, aged 24, consulted me in regard to vaginal bleeding. Six months previously she had miscarried at three months. Following this she bled and came under the care of one of the most competent gynecologists in Philadelphia. She was curetted at operation, but not enough was obtained, in the judgment of the operator, to account for the hemorrhage. The abdomen was accordingly opened. The uterus appeared normal and therefore the abdomen was closed. When she came to me she had hemorrhagic fungating masses on the anterior and posterior walls of the vagina, probably chorioepithelioma. Here the curet failed; and moreover, if it was justifiable to open the abdomen why not the uterus, the seat of the diseased condition? This simple and proved innocuous procedure might have made the difference between cure and a hopeless outlook three months later.

Vaginal incision of the anterior wall of the uterus has been advanced as a satisfactory substitute and a safer operation than suprapubic hysterotomy. Technically, it is somewhat more tedious and difficult, though that in itself would be no bar to its acceptance did it possess any real advantages. On the contrary, it fails of its object in exposing the entire fundus. The anterior wall of the uterus can be incised only as far as the peritoneal reflexion of the bladder. The field is small and difficult to keep clear of blood, and the cornua cannot be seen. In addition to this, there is a real danger of injury to the bladder and urethra, as has actually occurred. The carcinoma of the cornu here reported could not have been seen by this method. It should be understood that the hysterotomy incision is for the purpose of seeing and that palpation will not suffice for the diagnosis of early cancer of the uterus. The uterus itself is hard and its consistency is not noticeably increased by the implantation of cancer. We must depend on a ragged, friable, easily bleeding and possibly ulcerated surface, characteristi appreciable only to the eye.

Not only can we detect a percentage of early cancer by hysterotomy, but in a more considerable percentag of cases in which cancer is reasonably believed t exist will the incision reveal the true cause of th bleeding in hyperplastic endometritis, polyps of th endometrium or small submucous myomas. Thes conditions may necessitate only local treatment whic can be made thorough and complete under the guidance of the eye. The impossibility of thoroug removal of a hyperplastic polypoid endometrium b blind scraping can be appreciated only when such uterus is freely opened and the actual condition seen. To those who are able to delude themselves into th belief that they can accomplish the impossible, th operation of hysterotomy will not appeal.

The operation itself is simple. The abdomen i opened by the usual paramedian incision. The uteru is grasped in volsellum forceps and carefully packe off by moist gauze pads. The anterior surface is the incised down to the peritoneal reflexion of the bladder, which may be carried forward if necessary With small retractors the interior may be completely exposed to view. If the uterus is to be allowed to remain the incision is closed by buried layers of chromicized catgut sutures extending down to, but no through, the endometrium. Accurate apposition is essential. A running seromuscular stitch of linen placed close to the edge and invaginating the serosa completes the closure.

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ABSTRACT OF DISCUSSION

ON PAPERS OF DRS. DAVIS AND DEAVER

Dr. Richard C. Norris, Philadelphia: The important advances in recent obstetrics have been surgical, and yet, it is my conviction that surgery applied to obstetrics should come, not from the general surgeon, but from the trained surgical obstetrician. The problem is not, what surgery can do, but rather what it must do. I believe that cesarean section is an operation in the obstetrician's armamentarium that will be resorted to more and more frequently. The problem is not to find out how often we can do it, but how often we must do it. Hysterotomy for routine diagnosis is "going some." The curet has helped us, as also has intra-uterine exploration with the intelligent finger, and our laboratory methods combined with the clinical history. When these means of diagnosis fail us, which is very seldom, there are a few cases which bring the patient to the surgeon's knife. The abdomen is opened and what happens? Time and again you will take the uterus out after you have cut it open. Your diagnosis is pretty well made beforehand or you would not operate. There are a few cases in which we are perplexed; but, let it not go forth from this Section, that if you don't know what is wrong inside a woman's uterus, you should cut it open to find out. Such a doctrine is pernicious and all the more so when taught by a distinguished surgeon.

In the treatment of placenta praevia an analysis of statistics will show that the mortality lies with the infected patient. Preliminary care of the patient is necessary. We see cases of placenta praevia in which the patients are so exsanguinated and so surely infected that it would be an obstetrical folly, and a surgical crime, to do a cesarean section. There are cases recognized promptly, and early brought to the obstetrical surgeon, in which cesarean section is the ideal procedure—and the well-trained obstetrician recognizes that. You can reduce the mortality of placenta praevia by training the profession to treat cases early, in the proper way, far more than by advocating cesarean section for every case. It is a campaign of education of the rank and file that is the real burden of the efficient obstetrician and surgeon. The time is at hand when modern surgery applied to obstetrics will add to her laurels and increase her triumphs.

Dr. George M. Boyd, Philadelphia: Prophylaxis, I believe, is the keynote of the whole situation. On the one hand, we have numerous danger signs in the toxemia of pregnancy leading to eclampsia which if heeded will prevent this condition. This is not so markedly the case in placenta praevia. Here the patient is seemingly well and in 75 per cent. of cases she will go nearly to the end of gestation without a danger sign. She then begins to bleed and it is in the early recognition of the magnitude of this hemorrhage that safety lies. We must teach the student to look with great gravity on this hemorrhage in the last months of pregnancy. He must look on such a patient as one suffering from arterial hemorrhage and must make an accurate diagnosis. If to do this requires anesthetization and the patient refuses he had better turn the case over to some one else to treat. It is then, in the early recognition of placenta praevia that we can do effective work. The treatment of placenta praevia formed the subject of the opening discussion in the seventeenth meeting of the International Congress in London. As a result of that discussion I reached the conclusion that, in the majority of cases, the patient is best treated by bipolar version. The patients die of infection and also of hemorrhage. A few cases will probably be better treated by ciliohysterotomy. In 1901 I presented, as part of a symposium on placenta praevia in our county medical society, a paper on cesarean section in placenta praevia and it was pretty sharply criticised. Since that time I have followed two or three of the maternities in our city. I advocated it at that time in the restricted sense in the primipara with a central implantation of the placenta. I still feel that it has a field of usefulness although limited. In only two cases have I felt that cesarean section was indicated. In both cases the patients flatly refused operation. I believe both would have been better served by cesarean section. I would emphasize the necessity of early recognition of placenta praevia and its immediate and radical treatment. In the majority of cases in the hands of the general practitioner I believe we serve our patients best by performing bipolar version.

Dr. Damon B. Pfeiffer, Philadelphia: Any one who has had my opportunity of seeing numerous uteri removed by various able and conscientious surgeons, must have received the impression that gynecologic diagnosis lacks something in that precision which is necessary in fitting the operation to the case. We may be horrified at the prospect of incising uteri unnecessarily. Are we not horrified at the prospect of removing uteri unnecessarily? I believe that very many uteri are removed every year for conditions which would not warrant hysterectomy. This movement toward diagnostic incision is the result of a demand for better diagnosis on which to base our most radical procedures. Mistakes occur usually in connection with bleeding, a symptom which demands recognition of its cause in order to determine the treatment which is adapted to the particular underlying pathologic condition. We admit, of course, that many uteri must be removed for bleeding, the cause of which is at the present time inexplicable. It is a different matter when you remove a uterus with a small submucous myoma, a small isolated polyp or a hyperplastic endometritis. In all these cases diagnosis could have been made earlier, I think by hysterotomy than by curettage.

Dr. John O. Osborn Polak, Brooklyn: I do not think that we should decide against or in favor of hysterotomy without taking some of the considerations for and against. It is a pitiable condition if we cannot make a diagnosis without opening the abdomen for diagnosis. Hysterotomy has a definite place. Why any man should do hysterotomy on early placenta praevia or for diagnosis in the early months of pregnancy I cannot see. Day after day we do hysterotomy in questionable bleeding of the uterus by the vagina. We come to exactly the same conclusion that has been so admirably expressed here: Feel and see what is inside the uterus and the cornu, and I don't think there is any difficulty in doing it. In some 500 cases of vaginal operations that we have done I have injured the bladder just once, and I did it only last week, showing a man how easy it was to do it. Dr. Deaver's statement that abdominal hysterotomy should be used as a diagnostic method, is admirable in Dr. Deaver's hospital, in Dr. Deaver's hands, but it is a most dangerous statement to take out of this Section. Again in the early toxemias of pregnancy why should we do abdominal hysterotomy when we could empty the uterus by vaginal hysterotomy with no morbidity? There I am absolutely assured.

Dr. John M. Fisher, Philadelphia: It is not necessary to have the eye on everything within the uterus in order to make a proper diagnosis. Dr. Deaver has spoken of curetting as being almost the only method we have of determining the condition of the interior of the uterus, save that of hysterotomy. We all know that it is possible to dilate the uterus so that the finger can be introduced and that by the educated finger a diagnosis can be made of the presence of abnormal conditions within the uterine cavity. I recall a case in particular of a woman in the Philadelphia Hospital who had found her way into the surgical department of the institution, referred to us as having cancer of the body of the uterus requiring hysterectomy. Dilatation of the os and digital exploration of the uterus demonstrated retention of fetal bones. These had been there almost four years and had become imbedded in the substance of the body of the uterus. The history of an offensive discharge covering four years should have sufficiently demonstrated to the surgeons that the case was not one of cancer. For another case a piece of gauze was found introduced by a man who had curetted some months previously. In this, likewise, a diagnosis had been made of cancer of the uterus. After dilating the cavity of the uterus a proper diagnosis was readily made. I saw a case of persistent bleeding recently in which curetting had been done twice, and the woman was still bleeding. As the curetting had been done by general surgeons, not by a gynecologist, we thought that possibly something had been missed. The patient had had an abortion several months previously. By the introduction of the finger through the previously dilated cervix the cause of the bleeding was easily determined to be a small mass attached to one cornu of the uterus. The mass was removed and the bleeding ceased. So with other cases. Hysterotomy for the diagnosis of submucous fibroids is rarely necessary. Dilatation of the uterus can be effected with the finger, bougies, metranoiter or lamina tents (properly sterilized), so that a satisfactory digital exploration can be made. The man who does hysterotomy for diagnosing submucous fibroids in all cases is making a serious mistake because it is absolutely unnecessary. So in many cases of cancer of the body of the uterus, early diagnosis can be frequently made by the finger. The gynecologist develops a sense of touch for determining things that the general surgeon has to see.

Dr. A. J. Rongy, New York: As long as we are going to relegate the placenta praevias to the general practitioner, so long will these cases be more injurious than a perforated gastric ulcer. No general practitioner undertakes to treat this condition. The secret of the successful treatment of placenta praevia lies in early diagnosis. In early placenta praevia, as Dr. Davis has said, or in ectopic pregnancy, we have taught the general practitioner that he must presuppose the possibility of eclampsia. So with a woman who is pregnant and begins to bleed in the seventh or eighth month, the practitioner must presuppose placenta praevia, no matter what other diagnosis he may have in mind. As soon as the condition of placenta praevia is diagnosticated the woman must be taken to a well-trained surgeon or to a hospital. She has no chance at home. We have practiced all sorts of medical obstetrics heretofore, the results of which are known. My personal results with cesarean section in placenta praevia are not as good as I would like them to be. I have operated in cases probably too late. The best chance for saving the life of the patient and of the child in placenta praevia is by abdominal cesarean section.

Dr. Joseph B. DeLee, Chicago: I have performed cesarean section for placenta praevia eight times. At the same time and during this period I have treated sixty-eight other cases of placenta praevia myself and the mortality of the cesarean cases has been nil. The mortality in the sixty-eight other cases has been three. Of these cases two patients died of hemorrhage, one of whom I believe would have lived had I done cesarean section. At the same time the obstetrician is the one and the only one capable of saying which case is proper for cesarean section. A large majority of placenta praevia cases can be successfully treated from below without "flirting with death." It is my conviction that the placenta praevia case is the case for the specialist obstetrician. A general practitioner, with a large amount of obstetric experience cannot accumulate sufficient technical skill to handle these grave complications. The curet has certainly been damned too much because it has not been used correctly. It has deserved a great deal of this condemnation. I use the curet for diagnosis, and by a systematic going over of the anterior, posterior and lateral surfaces find we do much with properly shaped instruments and the uterus steadied in its position by the outside hand. The fingers within the vagina guide the curet in the uterus and the operation will give a great deal of positive and definite though not final information. Emphasis was placed on the education of the doctors regarding the first hemorrhage in pregnancy. We should educate not alone the doctors, but the public, and we can educate the public to educate the doctors. The public should demand high obstetric skill and this demand can be brought through the women's clubs. In Chicago we organized a little club, "The Mother's Aid Society," which has rapidly grown to over 700 members. Its slogan is "High Standards of Obstetric Practice," and you would marvel at the formerly neglected obstetric conditions which are now referred to the doctors. This, done by a few women, well shows what can be done by the large federated clubs of women.

Dr. Swithin Chandler, Philadelphia: I am sure Dr. Deaver doesn't mean that every time a patient with pelvic disturbances comes to him he is going to do a hysterotomy, but that he is going to use his best judgment; that when he has a case indicating a serious pelvic condition, he is just as able as any one whether a gynecologist or not, to determine that by the ordinary means. To attack this operation of Dr. Deaver's we must consider two things: Either the operation itself must be dangerous or else the use of it in making a diagnosis is unwarranted. We certainly cannot attack the operation on the ground that it is dangerous. I do not agree with the men who state that the finger can always tell the condition present, nor can this be done always with the eye. If I have a case in which there has been a curettage and in which I cannot tell the condition by the finger, history of the case, etc., I shall do Dr. Deaver's operation. The man who does not, under such conditions is, in my opinion, just as guilty as the man who neglects a case until it is too late for operation. I would depend on Dr. Deaver to use his judgment in the individual case.

Dr. Edward P. Davis, Philadelphia: What is the status of the widest experience in the world to-day concerning placenta praevia? A recent investigation in one of the principal provinces of Germany, a country under the best medical conditions, shows that of all women dying in the perils of childbirth, 10 per cent. die from placenta praevia. What are the results of the treatment of placenta praevia in private houses by men trained in the universities of Continental Europe, and who have had hospital experience? Will 820 cases give you an idea? Probably a correct one or fairly so. They give a maternal mortality of 10.9 per cent.; a fetal mortality of from 40 to 60 per cent. Now let us take our cases of placenta praevia in hospitals; in the Congress in Berlin in the summer of 1912, was given the interesting report of Couvelaire in the Tarnier clinic at Paris, of 162 placenta praevias of serious nature without cesarean section, using the dilating bag and the rupture of the membranes, with a maternal mortality of 6.7 per cent., fetal, from 44 to 66 per cent. If we go to the Leipsic Clinic of Zweifel, than whom there is no more able obstetrician and gynecologist to-day, we find him getting, in placenta praevia, by combined version under strict asepsis, a maternal mortality of 3.3 per cent.; a fetal mortality of 68.8 per cent.; and by using the bag as described in my paper, we find him reducing the maternal mortality to 2.6 per cent. and bringing down the fetal mortality to 26.8 per cent. This must be taken as the acme of hospital treatment by skilled men without abdominal cesarean section. In the Freiburg clinic, a series of thirty-eight cases treated by abdominal cesarean section by Pankow gave a maternal mortality of 2.5 per cent.; a fetal mortality of 2.9 per cent. the lowest rate for mother and child yet reported. The question of abdominal cesarean section depends for its solution on whether the parturient woman in her complications is deserving of the care which a woman with appendicitis or ovarian cyst receives, or whether she shall have the older and less efficient methods. I hold it a gross injustice to the general practitioner of medicine that he be asked to undertake such responsibility under disadvantages, as he has been called on to do in the past, in obstetric practice. He has borne this responsibility alone and unaided, at any hour of the day or night, and he has done things from which the boldest surgeon would shrink; his results were extraordinary, and I yield to no one in his honor. The present trend of medicine gives to the general practitioner a field in which his opportunities are unsurpassed and for which the training of the medical schools to-day amply fits him namely, the field of diagnosis. The medical student to-day, so far as I have to do with him, is taught obstetric diagnosis first, and then what not to do, quite as much as what to do, and when to summon the competent obstetrician.

Dr. John B. Deaver, Philadelphia: I can answer the protest against opening the uterus if a diagnosis can't be made otherwise only by protesting against leaving the uterus unopened when a diagnosis cannot otherwise be made. Dr. Norris agrees that there are indications for this operation. As sane a man as Dr. Norris could not look at it from any other point of view. There is a type of disease of the uterus which no man can diagnose without resorting to the procedure I have recommended. What is the attitude of the surgeon to-day in upper abdominal disease? Is it possible to diagnose every upper abdominal condition before the abdomen has been opened? What does the exploratory operation reveal?—the true pathologic condition. Is it not a more honest, just, conscientious course to pursue than to deceive your patient by looking wise, getting a consultation fee and making them think that you know it all? Those who assume this position are dangerous doctors and capable of doing much harm in their community. We are no further along in the treatment of cancer than we were many years ago. We must operate in the precancerous stage, and those who are not doing as I and others advise in this respect will continue to write certificates of death, the result of latent cancer. Any one who uses laminaria tents to dilate the uterus invites infection. Any one who knows anything knows he cannot dilate the normal uterus with the finger for thorough exploration; this is an unanatomic, unphysiologic, illogical and unsound statement. The surgeon, I grant, who possesses the tactus eruditus is more fortunate than his brother who has never acquired it. Dr. DeLee sounded a note as to the laity educating the doctors. From what I have heard this afternoon I think it is high time that the laity educated the gynecologists.

Antityphoid Vaccination.—No amount of theoretical proof or disproof of the value of typhoid vaccine can affect the practical accomplishment of antityphoid vaccination. Previous to vaccination in the United States Army the best sanitary measures were only able to reduce the death-rate to 19 per 100,000. In southwest Germany perfect sanitary organization and military discipline have only been able to reduce the typhoid death-rate to 4 per 100,000, while the case-rate for the United States Army in 1913 was only 3 per 100,000. Vaccination is as successful in preventing typhoid as in preventing small-pox. The death-rate from typhoid in the registration area for 1913 was 16.5 per 100,000. There are no valid reasons why everybody outside the Army and Navy also should not be vaccinated. Vaccination against typhoid does not prevent other water- or milk-borne diseases, so that sanitary improvements are as necessary after as before vaccination.—Will Shimer, *Jour. Ind. State Med. Assn.*

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THE NECESSITY FOR THE ESTABLISHMENT OF A NATIONAL LEPROSARIUM *

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The problem of the control of leprosy in the United tates presents many contradictions and perplexities. Iere is a disease, one of the oldest of which we have nowledge, and about which we know relatively little. Ve witness its effects and believe we have discovered its causal organism, yet we have garnered only a very small sheaf of facts regarding its epidemiology. The route of entry of the bacillus is not definitely known; the organism is cultivated with the greatest difficulty and exists in many strains which present marked differences; it is not pathogenic for the lower animals and we do not know the length of its incubation period in the body of man. The rôle of rodents and insects in its transmission has been suspected, but here again we must admit our ignorance. There exists no positive means for its diagnosis in its earliest stages; no wholly satisfactory method of treatment has been devised; the period of its greatest infectivity is unknown, yet we believe that the disease is mildly contagious. We do know that there is no racial immunity to leprosy, that it exists in all portions of the globe and that segregation and personal cleanliness are our only weapons against it. Add to the foregoing the facts that the individual and community fear of the disease is so great as to amount to a veritable leprophobia, that there are several well-established foci in the United States, that the disease is slowly but surely on the increase, that there are probably many more cases unreported than there are reported, that there exists no federal institution for the exclusive care and reception of lepers on the continental United States, and the statement of the problem is complete.

Out of such a mass of contradictory evidence, there are only two facts on which we may lay hold for the purpose of controlling the disease. These are segregation and cleanliness. We know that the disease exists among those who are careless in their personal hygiene and that when these persons are removed from intimate contact with society, the disease dies out. The disease has been made notifiable in most of the states, in three of which leprosaria have been established. Each of these treats a small number of lepers, but the per capita cost of such treatment is excessive because the overhead charges are divided by such a small number. This, in part, has contributed to the very general desire for the establishment of a federal institution in which all the lepers in the continental United States may be segregated.

Another factor in bringing about the feeling among thinking men that we should have a national leprosarium is the inhuman treatment to which lepers are subjected in this country. Let a man be marked as a leper and he becomes a pariah, an outcast from society, to be hounded from place to place, to be locked up in a lonely, often filthy, building, there to be viewed at a distance by the more intrepid as some wild and dangerous animal. The unwelcome visitor disturbs trade, and he is hurried by night over the state line, there to be subjected to further indignities and to become a thorn in the side of another community, by reason of the economic losses which his presence produces. Verily the lot of the leper in this Christian country of ours is sad and troubled.

From time to time, intelligent legislators have introduced bills into Congress looking to the establishment of an institution in which the unfortunate leper may be protected from society and society protected against him. No one doubted the wisdom of such a measure, but the leprophobia of the general public is such that none of these bills have ever been allowed to come to a vote, because every community feared that it might be selected as the site for the leprosarium. It was useless to say that the disease is only mildly contagious because that at once destroyed the raison d'etre for a place of segregation, and the public as a whole has not yet learned the simple lesson that cleanliness in all things is our greatest bulwark against disease.

None of the proposed measures have considered the mechanism of an official diagnosis, nor have they taken into account the fact that if society is to be permanently protected, the leper must be legally committed to the place of segregation. Once so committed, he must be deterred from reentry into close, prolonged or intimate contact with society, and the weak-mindedly sentimental must be prevented from aiding in such reentry.

Our immigration laws require the deportation of lepers who are found to have the disease within three years after landing, provided it be shown that the disease existed prior to their arrival in America. This law takes no account of the long period of incubation of the disease and the great difficulty of its recognition in its early stages. The frank case of leprosy is remanded at quarantine, but the immigrant in the incubative stage of the disease is not deportable after three years have elapsed, or if he can by legal quibble defeat the attempt to prove the existence of the disease prior to debarkation.

Many of the countries of the world have leprosaria. Many of the countries which support such leprosaria are far less wealthy than the United States. We know that the number of cases in the United States is relatively small, and that if the disease is fearlessly attacked now its control will be relatively easy. It is true that leprosy is a disease which spreads very slowly, but where it has once spread it never recedes unless active measures are taken.

In order to meet the foregoing conditions, I have made a rough draft of what seems to me to be appropriate legislation on the subject. This represents only my personal opinions, and has no official sanction whatever. The following is the text of the proposed act:

AN ACT for the prevention of the interstate spread of leprosy. Be it enacted by the Senate and House of Representatives of the United States in Congress assembled, That the Surgeon-General of the United States Public Health Service shall, on the request of any state or territorial board of health, appoint a board for the purpose of examining and making a diagnosis in the case of persons suspected of having leprosy. said board to consist of not less than three commissioned medical officers of the United States Public Health Service who shall be skilled in the clinical and bacteriological diagnosis of leprosy, and the findings of said board shall be final.

2. That when any state or territorial board of health shall desire a diagnosis in the case of any person suspected of suffering from leprosy, it shall request the Surgeon-General of the United States Public Health Service to appoint and convene a board as aforesaid, and said state or territorial board

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* Read before the Section on Dermatology at the Sixty-Fifth Annual Session of the American Medical Association, Atlantic City, N. J., June, 1914.

of health shall present the person to be examined to the said board.

3. That there is hereby appropriated out of any funds remaining unappropriated in the treasury of the United States the sum of five hundred thousand dollars for the purpose of erecting and maintaining a National Hospital for Lepers, and the secretary of the treasury is hereby directed to acquire a suitable site for the erection and maintenance of a National Hospital for Lepers, said site to be so located as to prevent the inmates in said hospital from conveying the contagion of leprosy to neighboring communities, and the secretary of the treasury is authorized to utilize for this purpose any of the unallotted lands of the United States which in his opinion are suitable for a site for the erection of said hospital, provided, that if in the opinion of the secretary of the treasury none of the unallotted lands of the United States are suitable for said purpose, he may acquire by purchase or otherwise said suitable site, and the secretary of the treasury is hereby directed to cause to be erected and maintained on said site suitable buildings and equipment for the care of persons suffering from the contagion of leprosy, and for the study and investigation of the disease.

4. That when any person in the United States shall have been examined by a board as aforesaid and found to be suffering from leprosy, the said leper shall be taken before a United States District Court and the judge thereof shall commit said person to the National Hospital for Lepers, and when said leper shall have been so committed he shall not leave the said National Hospital for Lepers without the express permission in writing of the Surgeon-General of the United States Public Health Service, and there may be received into said hospital commissioned officers and enlisted men of the United States Army, Navy and Revenue Cutter Service, who shall have been examined by a board appointed as aforesaid and committed by proper military court, and there may also be received into said hospital any of the beneficiaries of the United States Public Health Service who shall have been examined by a board and committed by the United States District Court, as aforesaid, provided, that any alien immigrant who shall develop leprosy within seven years after his landing in the United States shall be remanded to the country whence he came, and provided further, that when any person or persons shall give bond in amount not less than five thousand dollars to a United States District Court for the safe keeping of a leper according to rules and regulations made by the Surgeon-General of the United States Public Health Service and in such manner as in no wise to endanger the public health, said leper shall not be committed to the National Hospital for Lepers, and provided further, that when on the evidence of a board appointed as aforesaid it shall be made to appear to the satisfaction of a United States District Court that said person has been cured of leprosy, said person shall be discharged from the National Hospital for Lepers.

5. That it shall be a misdemeanor for any person committed to the National Hospital for Lepers to leave said institution except in the manner aforesaid and any person or corporation aiding, assisting or abetting in the escape of any leper from said institution shall be guilty of a misdemeanor, and any common carrier transporting said escaping leper shall be guilty of a misdemeanor.

6. That said National Hospital for Lepers shall be under the control and direction of the Surgeon-General of the United States Public Health Service, who shall make rules an regulations for its administration, and when any officer or employee of the United States Public Health Service shall be detailed for duty in said hospital, he shall receive in addition to the pay and allowance of his grade one-half the pay of said grade and such allowances as shall be provided by the Surgeon-General of the United States Public Health Service with the approval of the secretary of the treasury.

7. That any person, partnership or corporation violating any of the provisions of this act shall be guilty of a misdemeanor and shall on conviction thereof be punished by a fine of not more than five hundred dollars or imprisonment for not more than two years, or both, in the discretion of the court.

THE DUTY OF THE GOVERNMENT IN LEPROSY CARE AND CONTROL*

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NEW ORLEANS

The modern interest in leprosy was excited in the decade between 1880 and 1890, governed largely by the announcement of the discovery of the leprosy bacillus by Hansen in 1879 and by the death of Father Damien in the later eighties.

Impetus was given the study of leprosy by the immense work undertaken and completed by the British government in India and embodied in the report of a special commission, promulgated in 1890.

Many other governments grew active and the Berlin conference of 1897 was the direct outcome. Representatives of all important leprosy centers were there, as well as delegates from countries casually interested. The findings of that conference were important. Not only was leprosy declared contagious, but it was also considered so important in the economic relations of governments as to occasion especial recommendation of isolation "in all countries where social and legal conditions permit."

As special action covering this phase of the control of leprosy, resolutions were adopted, without a dissenting vote, covering isolation, to wit:

1. All cases of leprosy should be reported, and this should be made compulsory.
2. Each leper should be isolated.
3. Every government must recognize the necessity and the method of effecting isolation under its own social conditions.
4. That it be recommended to every government that isolation is necessary to prevent the spread of leprosy, and that the health authorities be authorized to act under the regulation of civil and national assemblies.

The response to the deliberations of the Berlin meeting was wide-spread, and a renewed effort was made by most civilized countries to investigate leprosy and to provide for its control. Among the few countries which ignored the findings was the United States.

EVIDENCE OF LEPROSY IN THE UNITED STATES; INDIGENOUS AND IMPORTED CASES

Twice in the last fifteen years the U. S. Public Health Service has been authorized to make a leprosy survey in this country.

The first report of 1902 submitted 278 cases as the result of the commission's work. Of these cases, 155 were from Louisiana alone. The balance of the cases came irregularly from other states, where no general system prevailed for the care of leprosy or of its notice.

The second report, in 1912, I believe, showed practically the same results.

The mere compilation of state records and of current periodicals showed that neither of these official reports was of any statistical value.

Since 1894, the Louisiana Leper Home alone has cared for nearly as many lepers as the Public Health Service statistics showed for the whole United States. That leper home has had a gradually increasing population, now numbering nearly 100 inmates. Texas has a number of cases, known to be as many as twenty-five or thirty, and estimated at twice that number; Florida has a number of cases also. There are cases in Mississippi and Alabama, and in all these states the great majority have originated in the state in which the disease has been recognized. California has had around thirty cases under control for many years. New York City has many cases—more reported in the journals than in all other sections put together; in New York the number is usually estimated at more than 100. Massachusetts has enough cases to have demanded an isolation hospital for them. Other states have noted cases, as Oregon, Minnesota, Michigan, Pennsylvania, Iowa, Wisconsin, Missouri, Ohio, Indiana, etc.

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* Read before the Section on Dermatology at the Sixty-Fifth Annual Session of the American Medical Association, Atlantic City, N. J., June, 1914.

The disease is wide-spread and without much hindrance or control. The easy entrance of these cases from foreign countries is evident in the clinics in New York City as reported at the various dermatologic societies. In the winter of 1911-1912, at a meeting of the Academy of Medicine, seventeen cases were shown; among them not more than two or three were native-born, the rest coming from Central America, the West Indies or Continental Europe. At a clinic on the day of that meeting, several cases of extreme types were shown, all the patients being foreign-born.

THE FAILURE OF STATE ADMINISTRATION

The indifference of many states is in strong contrast with the hysteric activity of others. In New York the leper goes about freely, visiting the clinics, and often remaining as an inmate in a general hospital. Some lepers are confined on Blackwell's Island, but too few to be significant of any public health effort. The states of West Virginia and Maryland a few years ago struggled with one another to see which could be more medieval in the handling of a Syrian leper. The case of the soldier Early is still an acute problem in the care of leprosy. It will be remembered that his final allotment to government care disposed of popular clamor. Texas has passed laws which could not be enforced because of popular prejudices.

In Louisiana the law is adequate, compelling the report and confinement of lepers, but they abscond from the home, or run away to another state as soon as they know what is the matter with them.

The knowledge of the existence of the Louisiana Leper Home has made it the asylum for lepers from other states and even other countries, in spite of the fact that the law is specific in restricting provisions to Louisiana residents. There are many ways of subterfuge. The growing tax on Louisiana will be an obvious object-lesson to other states as soon as the provision for leprosy control is demanded by the incidence of the disease. Meanwhile no state has as yet solved the problem of leprosy control, and the disease grows annually in its spread and in its numbers.

THE PATERNAL FUNCTION OF THE GOVERNMENT

The federal government until now has been apathetic to this question. It might be properly urged that leprosy, like tuberculosis, syphilis, pellagra or smallpox, is a question of state administration under local health authorities. But the government has taken direct interest in some of these things, even at home. The stronger opposing argument, however, is the attitude of the government abroad.

Leprosy is a matter of such direct concern to the United States in the Sandwich Islands, Porto Rico, the Philippines and even on the Island of Guam, that in each of these territorial divisions there are large provisions for leprosy. The Philippines are provided with several asylums; the Sandwich Islands conduct a model leper colony for less than 500 inmates and appropriations are constant for the care of this asylum. More than this, only a few years ago as much as $250,000 was appropriated for the study of leprosy at Molokai.

Why has no provision been made at home, other than makeshift investigations which have no real value in the control of the disease?

OPPORTUNITY IN RESEARCH, TREATMENT AND CARE

It is true that good work in the study of leprosy has been accomplished by Brinkerhoff at Molokai, and Heiser and Clegg at Manila, but with the very limited opportunities afforded in this country, more has been done in treatment and care than in the colonies. The influence of climate has been observed in Minnesota; the treatment now most used in this country and in the Philippines originated at the Louisiana home and in my practice. The study of leprosy transmission to monkeys, fish and cold-blooded animals was elaborated by the laboratories of Tulane. The cultivation of the accepted bacillus of leprosy was furthered in this country, and at least one of the modern vaccines was originated in this country.

How much more could be done with governmental control and governmental opportunity, coordinating the many men available in the United States for such work!

This is a problem of national interest and importance and it only needs concentrated effort to solve it, which means permitting proper methods.

THE DANGER IN NEGLECT; EPIDEMIOLOGY IN THE UNITED STATES

As yet no great effort has been made to control leprosy in the United States. The foci of the disease are already recognized at all the four points of the compass—Minnesota, New York, California, Louisiana and Texas. The sporadic cases in the states in the middle territory show the signals of new areas of infection. Each seaport at present is a ready medium of new cases as quarantine of leprosy is administered, and once admitted the regulations of local and state boards of health are not adequate in provisions or enforcement to check the ingress by a proper notification to federal officials charged with the quarantine enforcement. Those of us who have been persistently militant in the demand for national control of leprosy are repeatedly subjected to the charge of hysteria in our ideas of the dangers of leprosy. Such attacks are engaged in by men to whom leprosy is an exotic disease, rarely observed and to whom no economic, sociologic or domestic phase can appeal. The disruption of a family through the occurrence of leprosy in its bread-winner; the horror of public condemnation of the unfortunate attacked by the disease; the notice of fresh outbreak in the same family, all are forceful arguments to one who knows the habits of the disease and the possibilities of the outcome. While leprosy is slowly contagious and probably mildly contagious, its usual horrors argue the danger of neglect. With probably 500 known cases to-day, how many will there be in ten years, if there is no control?

PREVIOUS ATTEMPTS AT NATIONAL LEGISLATION AND ACTION FOR LEPROSY CONTROL

In 1900, a bill for a national leper law was introduced at the Fifty-Sixth Congress by Mr. Raynor of Maryland. Its provisions generally contemplated a response to the Berlin Lepra Conference. A commissioner on leprosy was projected, to cooperate with state boards of health. A reservation in Yellowstone Park or other suitable place was suggested, with an appropriation of $50,000 for the erection of suitable buildings. The bill carried provisions for the apprehension, observation and control of the individual leper, in and out of the national asylum, which should be open to all lepers in the United States. Provision for regulation of entrance or transportation of lepers from foreign countries, territories, etc., was also made. It was intended that the asylum should be in charge of the United States Public Health Service. This bill died in committee.

In April, 1913, at the first session of the Sixty-third Congress, Mr. Lafferty introduced House Bill 1751, providing for a national leprosarium. The text follows:

> Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled, That the Secretary of the Treasury be, and he is hereby, authorized and directed to establish a national leprosarium in the United States or any of its insular possessions, the location thereof to be decided upon after proper investigation by the Surgeon-General of the United States Public Health Service, subject to the approval of the Secretary of the Treasury. The Secretary of the Treasury shall have power to acquire, by condemnation or otherwise, a suitable site for the leprosarium and shall erect thereon all necessary buildings and thoroughly equip the same for the proper care and treatment of lepers confined therein and for the investigation and study of the disease of leprosy.
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> Sec. 2. That the Surgeon-General of the United States Public Health Service shall appoint all medical officers, assistants, surgeons, pharmacists and other necessary employees, and shall promulgate and adopt, subject to the approval of the Secretary of the Treasury, all necessary rules and regulations to carry this act into effect.
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> Sec. 3. That, under authority of this act, any state or territory of the United States is authorized to transport all persons afflicted with leprosy found therein to the leprosarium, and the Surgeon-General is directed to receive the same, such transportation charges to be paid by the United States.
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> Sec. 4. That there is hereby appropriated, out of any money in the treasury not otherwise appropriated, the sum of ——— for carrying this act into effect.

This bill has been before Congress over a year. A recent reading of the bill was noted in the press, but unless more interest is excited it will likely go the way of the first attempt.

RECOMMENDATIONS

The Lafferty bill should become law and the provisions for leprosy isolation should be adequately undertaken at once.

The institution of a leper colony should carry with it all of the necessary details for the proper care of the patients as well as for the study of the disease.

The cases should be grouped according to their type and stage. Terminal cases should be separated from recently developed cases. An infirmary should care for those with complicating diseases. Single rooms are better than wards, and these should be arranged with ample ventilation—as nearly open air as possible. Frame buildings are more desirable than other structures as they may be easily destroyed or renewed should this be desired. The walls, ceilings and floors should be of such material as to permit frequent fumigation. Men and women and children should be separated in any colony provision aiming at final cure.

All hospital plans should look out for the provision for bathing facilities, hot water especially.

No matter what experimental treatment may finally attain, accepted methods should be systematically followed.

The first and most important thing is to have a national asylum established. Then its opportunities should be broadly offered to all students of the disease.

The hospital facilities should be of such a character as to attract the leper who wishes treatment and care. The general public should know early that the national leper home is not for compulsory detention but for the care and possible cure of the disease.

124 Baronne Street.

ABSTRACT OF DISCUSSION

ON PAPERS OF DRS. RUCKER AND DYER

Dr. Martin F. Engman, St. Louis: The need of a home for lepers and the national control of leprosy is well illustrated by a single dramatic incident that happened in St. Louis last summer. A former soldier in the Philippines came to the Washington University clinic with the macular type of leprosy. The period of incubation was about nine years. As the Missouri law required, the case was reported, and the patient at once was taken to a hut occupied by a chinaman with leprosy of a mutilating type. He later escaped from the quarantine, but, due to the publicity given his case, he returned to the quarantine hut in St. Louis and subsequently was given a better house to live in. A month later we had a second case of macular leprosy in St. Louis. This man had also been in the Philippines, and the period of incubation was about ten years. Owing to climatic conditions and the long period of incubation of the disease, the increase in cases in this country will be slow. We do not know anything about the method of infection. We probably know the organism that causes it; that is all. We know nothing of its cycle outside of the human body or its habitat. It is wise, therefore, to take every possible precaution against it, because when once established in a country it is difficult to eradicate. The only method by which this can be accomplished is by segregation. The time is now ripe to establish some law under which lepers can be segregated. It cannot be left to the individual states, as this would cause endless differences of opinion as to the diagnosis, etc. Government control is necessary. Every effort should also be made to check the hysterical wave that passes over this country every time a leper is discovered. This is one of the reasons why Congress has been so slow in taking any definite action in the matter. Whenever the question of the establishment of a leprosarium has been raised, and any particular locality has been mentioned, it has raised a storm of protests from the people in that particular section of the country. The opening campaign should be one of education. Through the daily press and by other means the people should be informed with regard to this subject. The Public Health Service of the U. S. Government is much handicapped by the lack of cooperation of the government, and the inability of the latter to do anything in the matter at present. One of the bills presented, that by Mr. Lafferty, is now before the Interstate and Foreign Commission, where it has been for some time. Mr. Dana, the chairman of the Mission to Lepers, who has worked hard in connection with this matter, has tried during the past winter to have this bill taken up by the Committee on Interstate and Foreign Commerce, but his efforts have thus far been unsuccessful, as the committee is overburdened with work. He thinks that if the medical men throughout the country will use their influence with the members of the committee, especially with the chairman, Mr. Adamson, it may be brought up.

There is at present quite a stir in Washington about leprosy on account of the Early case, and it is an opportune time for persons who are interested in this subject to communicate with their congressman by letter or otherwise, or even through their county medical societies. In Missouri we are trying to bring some influence to bear on Mr. Decker, who is a member of this committee. In that way we may be able to promote this cause, and if an urgent demand is made at once by the American Medical Association, coming through this body, it is possible that the question could be settled in a comparatively short time.

Dr. William S. Gottheil, New York: Every aspect of this subject should be carefully considered, lest we go to extremes and do an injury to our leper patients instead of helping them. While leprosy is contagious, the danger of contagion is extremely slight, and it is not in the same class with tuberculosis and syphilis. For thirty years we have had from one to six lepers in our skin wards at the City Hospital in New York, and in all that time we have not seen a single case of infection. We have lepers in New York City who are well to do, and I know of two cases in which the families are abundantly able to take care of their afflicted relatives and it would be a crime to remove these patients to a leprosarium. I know that Dr. Rucker, in his proposed legislation on the subject, makes removal to a leprosarium optional by bonding such patients. There are cases of leprosy without any buccal or nasal secretion, and I do not regard such cases as a menace to society. They may remain in such a condition for many years. We have had one leper at the City Hospital in whom for many years the only symptom was the presence of a few macular lesions. That patient is now developing a few tubercles.

Dr. Ernest L. McEwen, Chicago: The care of the leper should fall on the nation rather than on the states. The disease could be eradicated if we could isolate all the lepers. A most important step, as Dr. Engman has pointed out, will be to educate the laity with regard to leprosy, and this must be accomplished largely through the press. We must get at the people who control the press dispatches. The efficacy of this press control was well shown in a case of leprosy which we recently had in Chicago, when the patient was allowed to remain in the county hospital for some time without sensational comment by the newspapers. Later, this leper was sent east for deportation. A private car was assigned to him, together with a male nurse and a representative of the health department who had him in charge. When the food which they took with them became exhausted, they were obliged to apply to the men on the dining-car ahead for a further supply. This was finally obtained, but the food was passed to them on broken dishes and with the understanding that these dishes were to be destroyed! This is a good illustration of the insane dread with which leprosy is regarded by the laity. In order to educate the people properly I believe we must get in touch with the daily press and seek to change its attitude with regard to the news items on this subject, so that these will be discussed plainly but truthfully, rather than from the point of view of the prevailing standard of news value, namely, ability to create a sensation.

Dr. M. L. Ravitch, Louisville: While it is easy to talk about educating the public or the press, it is quite another matter to accomplish it. Whenever you mention the word "leprosy" everybody gets panicky. The dramatic picture of lepers, described by Engman, can be seen in a good many places. In my own city we had a case of leprosy of the tubercular form in an American woman belonging to a very aristocratic family; through wealth and influence a report of the case was kept out of the newspapers. In spite of that, her own family refused to shelter her. You cannot educate the public on this subject. The best way would be to establish a national leprosarium, or, better still, institutions for lepers in different sections of the country where these patients could be received and treated, where they could work, and feel that they were not totally ostracized. A number of small institutions would be preferable to one large one.

Dr. Charles H. White, Boston: Massachusetts is fortunate in having its own hospital for lepers, but the advantages of such an institution cannot be compared with those of a national leprosarium. Besides, the expense to the state of maintaining such an institution is excessive. In the leper hospital in Massachusetts we have nineteen patients, and while I do not remember the cost per capita, it is very high, and it has been difficult to get an appropriation large enough to maintain it properly. We are at present trying to get an appropriation to build a central treatment station which will cost about $40,000, but the outlook is not very promising. Then, again, the relatively few persons of the various races represented in such a small institution means lonesomeness for the patient and added expenses owing to radical peculiarities as to diet, etc. Such an institution offers many opportunities for valuable original work in connection with this disease, but owing to its isolation, the means are not always at hand under state control. We shall never be able to do what we should for these patients until the national government takes hold of the work. At present, the institution is under the contol of the State Board of Charities, and I think they would be glad to consider a proposition to turn it over to the national government.

Dr. Jay F. Schamberg, Philadelphia: The national control of leprosy is imperative on two grounds: first as a proper protection for the public health, and, secondly, for the humane care of the leper himself. The absurd lack of uniformity in the different state laws concerning leprosy is frequently brought to our attention. About a year ago a resident of a neighboring country temporarily residing in New York was told that he was suffering from leprosy and came to Philadelphia for advice and treatment, but he always went back to New York to sleep, because in New York he was a free man while in Pennsylvania he was the subject of a quarantinable disease. This lack of uniformity in the laws of different states regarding leprosy also leads to the inhuman treatment of lepers, who are often driven from pillar to post, because the several states do not wish to burden themselves with the perpetual care of these unfortunate subjects. I agree with Dr. McEwen that it is the duty of physicians in general and of dermatologists in particular to educate the public with regard to the relatively feeble degree of contagiousness of leprosy and the unreasoning fear of the community at large. Most of us believe that these patients should be quarantined, with, possibly, certain exceptions. It would be difficult to discriminate between the wealthy and the poor leper, but I agree with Dr. Gottheil that we should not recommend that every leper in the community should be forcibly quarantined. I feel very strongly, however, that the care of the leper under federal jurisdiction is much to be desired.

Dr. M. B. Hartzell, Philadelphia: I think it wise that we should be a little more in accord before we commit ourselves to any definite action. We should decide first as to the kind of institution in which the lepers should be segregated. Should they be regarded as prisoners or given a certain amount of freedom, as is done in leprosariums in foreign countries? In view of the fact that the disease is very feebly contagious, it is exceedingly questionable whether we should take such a patient by the neck, figuratively speaking, and thrust him into a prison to remain for the rest of his life. We must discriminate in the treatment of these patients, and ask the government to take care of them in a scientific and humane manner. Indeed, I am not at all convinced that every leper should be closely segregated. Considering how little we know of the method of transmission of the disease, I do not think we are as yet in a position to say that these patients should be imprisoned.

Dr. S. E. Sweitzer, Minneapolis: I am in favor of segregating lepers both for the purpose of studying the disease and for its proper treatment. In Minnesota we have a considerable number of lepers; as many as forty, I believe, have been under Dr. Bracken's supervision, but they are gradually dying out, and I do not think we have ever had a case of leprosy in the native born. This effect of climatic influence, I think, should be borne in mind in choosing the site for a leprosarium. I believe we will never succeed in stamping out this disease until proper precautions are taken to exclude lepers from this country. A number of years ago I saw a woman on shipboard, traveling first-class, in whom I made a diagnosis of leprosy, and she was reported as a suspicious case. The quarantine officer said he had never seen anything like it and permitted the woman to go to her home.

Dr. Gardner T. Swarts, Providence: In order to secure a leprosarium it has been suggested that we must first educate the public. That is to say, we must uneducate people concerning a belief which goes back over 2,000 years, but in order to do that we must first agree among ourselves as to the contagiousness of leprosy. In other words, we must first educate ourselves and then the public. In view of the generosity shown by New York, why should not New York be regarded as a leprosarium for the time being? A 15 year old leper was discovered by the Massachusetts authorities and escaped to Rhode Island, where he was immediately isolated. His family was ostracized and the health officer fumigated the school hat the boy had formerly attended, even going so far as to burn he boy's desk and books and finally to tear down and burn an American flag with which the child was supposed to have come in contact. This is a good illustration of the views held by the public with regard to leprosy. I think one of the best ways to interest your Congressman in this subject is to call his attention to the expense that is entailed on the individual states by the care of lepers, and what a saving it would mean to his state if a national leprosarium were established. Such a suggestion might take hold. Is there not a law under which the federal public health service can take charge of and segregate a leper who is a fugitive from one state to another?

Dr. W. C. Rucker, Washington: The U. S. Public Health Service is deeply interested in this subject from the standpoint of the public health, the prevention of the further spread of the disease and its eradication. The humanitarian aspect of the problem has not escaped our notice; we also have an administrative interest in this matter, and we can handle it through the interstate quarantine regulations. One of the functions of the federal government is the control of interstate traffic; hence it is the duty of the government to see that the states be not harmed in that traffic. Regulations have been established known as the interstate quarantine regulations, which provide that when a leper goes from one state into another he may be apprehended by the government and placed in a convenient quarantine station, but every time we have done that we have been deluged with letters and protests.

As to the mildness of the contagion of leprosy, I do not believe that anybody can assert whether leprosy is mildly contagious or violently contagious. We are not even convinced as to the cause of leprosy, let alone the manner in which it is transmitted from one person to another. I believe the education of the general public with regard to this disease should begin with the medical profession, and I do not think that anyone can educate the latter better than the members of this Section. I believe the more publicity leprosy gets, the better. The more we agitate this subject in the daily press, the sooner we will get the leprosarium. With regard to the transportation of lepers, I believe they can be transported with perfect safety provided it is done intelligently. Until we know more about this disease and its mode of transmission, we will naturally take a lot of unnecessary precautions. In answer to Dr. Ravitch I would suggest that we can get one leprosarium first and then perhaps we can get more afterwards.

According to the provisions of the act for the prevention of the interstate spread of leprosy, suggested in my paper, there is no danger of these leprosariums becoming prisons or of segregating these patients against their will or without due process of law. The idea of Surgeon-General Blue is to have these leprosariums regarded as asylums of refuge or homes, with theaters, etc., where the patients could be amused, where they could work and perhaps even earn money to help support those who were dependent on them.

Dr. Isadore Dyer, New Orleans: I appreciate the fact learned from Dr. Rucker, that the U. S. Public Health Service is now actively interested in the leper question. I have been working with that end in view for the past fifteen years.

THE THERAPEUSIS OF PERICARDITIS*

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SAN FRANCISCO

The pericardial sac in spite of its relationship to many important structures is, compared to the endocardium, accessible both for purposes of investigation and for local treatment. Since it often responds to the same infections, a careful study of pericarditis should be of value in considering endocarditis. In many ways the pericardium can, in its pathologic reactions, be likened to a joint. It may be infected by the same organisms as a joint either by extension of a local process or as part of a general infection. There is present the same spontaneous pain, the pain after excessive movement or strain, and often the pain after exposure to cold. Effusions of various kinds form and adhesions may appear and extend up to the point of obliterating the cavity. The treatment usually given is not unlike that employed for a joint, the main differences being that the danger to life is greater in pericarditis either from excessive effusion or hampering adhesions, and there is the impossibility of keeping the part absolutely at rest which is the principal aim of most forms of treatment for acute inflammations of joints. Since, as Rosenow has pointed out, bacteriologic studies of the disease processes of the living body up to date have largely been confined to its excretions and fluids, it is not unlikely that the study of the tissues, bone-marrow, cartilage, etc., about joints and of the pericardial sac itself and of the upper layers of the heart-muscle will clarify our conceptions of the inflammations in these localities. Unfortunately it is likewise probably true that local injections of medicaments into the pericardium for purposes of treatment will be as disappointing as they have been in most joint conditions, and for similar reasons, that is, the infecting agents being in the deeper tissues. The conditions in the pericardium except for the nervous tissues are apparently simpler than those of the synovia of joints. As in joints, it seems justifiable to make careful studies to learn the limitations and possibilities of medical treatment and of surgery both as to the drainage from the pericardial sac of the fluid products of inflammation and the treatment of adhesions in the pericardial sac or outside of it.

The wonderful nervous mechanism of the heart including the end organs in the endocardium and pericardium and their involvement in inflammatory processes complicates the problem. This mechanism must be most carefully considered in any local treatment as shown by experiments and clinical experience. The variability in the reaction of the pericardium of individual animals of the same species to the same agent is often quite inexplicable. Just as in previous experiments performed by me on the terrapin[1] in which at times irritants applied to the epicardium caused marked cardiac disturbances and often signs of general irritation, while at others no marked effect was produced, so in the human cases in which tincture of iodin has been injected into the pericardial sac there has either been no pain or a considerable reaction with marked distress, even shock.[2] This variability may be due to the fact that the thickening of the pericardium, particularly in the presence of pus, may protect the nerve-endings. McPhedran has suggested that in pyopericardium, 2 per cent. liquor formaldehydi in glycerin be injected with the hope that similar results to those observed in empyema may be obtained. One of the possibilities in this connection is that serums or various bacterial products may be injected into the pericardium if they are of value in controlling the organisms known to cause the pericarditis under consideration. In a short series of experiments on rabbits, carried on with the assistance of Drs. E. C. Dickson and E. G. Cary, in which various irritants were injected into the pericardium to produce pericarditis, the same variability in reaction seemed evident, some animals succumbing promptly while others survived without apparent early disturbances. This may be due either to the fact that rabbits are particularly susceptible or to imperfections in technic so that the whole charge of irritant did not become well distributed in the sac.

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* Read before the Section on Pharmacology and Therapeutics at the Sixty-Fifth Annual Session of the American Medical Association, Atlantic City, N. J., June, 1914.

[1] Wilbur, R. L.: Some Relations of the Nervous Mechanism of the Heart to Drug Effects, as Indicated by Experiments on the Terrapin, The Journal A. M. A., Dec. 23, 1911, p. 2037.

The following is a brief summary of a series of experiments in which injections were made into the pericardiums of sixteen rabbits:

Rabbit 10, 0.75 c.c. emulsion of diplostreptococcus (from a case of bacteriemia).
Rabbit 11, 0.75 c.c. emulsion of diplostreptococcus (from a case of bacteriemia).
Rabbit 12, 0.75 c.c. emulsion, Gram-negative bacillus (infectious polyarthritis, chronic, from knee-joint).
Rabbit 13, 0.75 c.c. emulsion, Gram-negative bacillus (infectious polyarthritis, chronic, from knee-joint).
Rabbit 14, 0.5 c.c. emulsion *B. diphtheriae* (New York strain).
Rabbit 16, 0.5 c.c. emulsion *B. diphtheriae* (local strain).
Rabbit 17, 0.5 c.c. tincture of iodin, 100 per cent.
Rabbit 18, 0.5 c.c. tincture of iodin, 100 per cent.
Rabbit 19, 0.5 c.c. tincture of iodin, 50 per cent.
Rabbit 20, 0.5 c.c. tincture of iodin, 50 per cent.
Rabbit 21, 0.5 c.c. tincture of iodin, 25 per cent.
Rabbit 22, 0.5 c.c. tincture of iodin, 25 per cent.
Rabbit 23, 0.5 c.c. oil of turpentine.
Rabbit 24, 0.5 c.c. oil of turpentine.
Rabbit 25, 0.5 c.c. oil of turpentine.
Rabbit 26, 0.5 c.c. oil of turpentine.

Rabbits 10, 11, 13, 16, 18, 19 and 23 died within a few days, and showed no pericardial lesions.

Rabbit 14 died in about ten weeks, and showed no pericardial lesions.

Rabbits 12, 17, 20, 21, 22, 24, 25 and 26 were killed, May 25, 1914.

RABBIT 12 (Gram-negative bacillus from knee-joint): Some increase in fluid in pericardium, slight protuberance at tip of left ventricle.

RABBIT 17 (tincture iodin, 100 per cent.): Liver enlarged, congested, anterior mediastinum shows some adhesions. Pericardium distinctly thickened and adherent to chest wall. Is opaque and shows some small hemorrhages. Epicardium has numerous opaque areas. Myocardium apparently involved. Hemorrhages in lungs.

RABBIT 20 (tincture of iodin, 50 per cent.): Some adhesions, some increase in fluid, few opacities in auricle, few opaque areas in pericardium.

RABBIT 21 (tincture iodin, 25 per cent.): Some prominent vessels in pericardium, no thickening, some whitish deposits along coronary vessels in ventricles.

RABBIT 22 (tincture iodin, 25 per cent.): No signs of pericarditis, few opaque areas in auricles.

RABBIT 24 (oil of turpentine): No changes excepting some fibrous material in ventricular wall.

RABBIT 25 (oil of turpentine): No thickening of pericardium, no adhesions, whitish deposits along coronary vessels in auriculoventricular junction. Apparently some increase in fibrous tissue in auricular wall.

RABBIT 26 (oil of turpentine): Pericardium slightly thickened and opaque, slight increase in fluid, opaque and slightly elevated areas over both ventricles and auricles.

RABBIT 17.—*Section of Pericardium* (tincture iodin, 100 per cent.): There is fairly marked fibrous thickening of the pericardium, with moderate infiltration with round cells. In places strands of fibrous tissue invade the muscle for a considerable distance. There is apparently some round-cell infiltration around the smaller vessels in the more superficial portion of the myocardium, but this is not marked.

Thus, tincture of iodin in full strength when the primary shock was survived produced a typical pericarditis with thickening, and interference with the general circulation leading to a marked engorgement of the liver.

In some of the animals turpentine produced a slight effect. Injection of an organism cultured from a joint, the site of a chronic process, was without evident result on the pericardium except perhaps a slight increase in fluid. The two injected with a diplostreptococcus died early without pericardial lesions. The results obtained are similar to those just reported by Wenulet,[3] who produced pericarditis by the local injection of bacteria, various toxins and turpentine. Staphylococci obtained from a dog produced the most marked lesions. Turpentine pericarditis ran a favorable course, but in all forms there were hemorrhages into the cardiac ganglia with some infiltration and degenerations of the nervous tissues. This was particularly marked following turpentine, in which the damage to the heart was slight in comparison to that of the ganglia. The Purkinje fibers were not found to be involved in the pathologic process. Rubino[4] found that the injection of staphylococci into an animal when the region over the pericardium was chilled by ice led to infection there. Rosenow[5] has shown that certain strains of streptococci, particularly *Streptococcus rheumaticus,* include the pericardium in their predilection for certain tissues. Rehn[6] has recently described experiments on the successful removal, under the Meltzer-Auer method of anesthesia, of portions of the pericardium, and has shown that often no adhesions form between the heart and the surrounding tissue. He has also been able to relieve adhesions by various forms of plastic operations with fat and omentum. Water-soluble substances such as indigocarmin when injected into the pericardium were found to appear within five minutes in the urine. He also by the injection of iodin and vegetable albumin into the pericardium of dogs produced marked pericarditis and found that simultaneous injections of iodipin with either the iodin or vegetable albumin limited or protected the heart from adhesions which usually form. Simple oil such as olive-oil was not found by him to be as effective as oil of sesame (iodipin). We hope to have the opportunity of continuing our experiments along these lines particularly to see if the injection of some substance such as liquid petrolatum into the pericardium will resist absorption and limit adhesions and also whether or not acute processes can be modified by harmless local injections. Up to date the various experiments on pericarditis have not added much to our methods of treatment, and even the numerous studies made on the cadaver have been of limited service because tried on the normal pericardium instead of that previously subjected to inflammation with consequent loss of elasticity and strength. We must then base our therapeusis at present largely on analogy and on clinical experience.

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[2] Aran and Maller, quoted by De Lorme and Mignon: Sur la ponction et l'incision du péricarde, Rev. de chir., 1895, xv, 796; ibid., 1896, xvi, 56.

[3] Wenulet, F. F.: Russk. Vrach, 1913, No. 49; abstr., Deutsch. med. Wchnschr., 1914, xl, 38.

[4] Rubino, A., quoted by Eichorst: Les péricardites expérimentales et bactériques, Arch. ital. de biol., 1892, xvii, 298.

[5] Rosenow, E. C.: Etiology of Acute Rheumatism, Articular and Muscular; Jour. Infect. Dis., 1914, xiv, 78.

[6] Rehn, L.: Zur experimentelle Pathologie des Herzbeutels, Arch. f. klin. Chir., 1914, cii, 1.

CLASSIFICATION

For purposes of treatment, pericarditis can best be classified as:

Acute:
  A. Dry.
  B. Serofibrinous:
    1. Diffuse, with epicardial involvement.
    2. Circumscribed, usually about the base of the heart and the origin of the great vessels, or posterior (Cassaet[7]).
  C. With effusion:
    1. Simple.
    2. Purulent.
Chronic:
  A. With effusion (exudate or transudate).
  B. With adhesions:
    1. Adhesion bands.
    2. Total obliteration.
    3. External adhesions—anterior, posterior, etc.

In general we can state that the processes mentioned above are due to the many kinds of organisms capable of producing inflammation or pus, and that access to the pericardium may be obtained by extension from neighboring parts, but usually is through the arterial blood-stream. This is particularly true in rheumatic pericarditis and the pericarditis of pneumonia, tonsillitis and the various primary septic processes. The pericarditis of scurvy, which is readily treated by proper food and drainage if necessary, and that form found in late chronic nephritis which is rarely affected by treatment I shall not discuss here.

While our treatment of all forms of pericarditis is far from specific, yet early recognition is of the greatest importance and unfortunately the disease is commonly overlooked. If anything definite is to come from therapeutic measures, the early stages of all of the forms of pericarditis are the ones most susceptible to the measures that we know how to employ.

EARLY DIAGNOSIS

The main points on which early diagnosis of dry and serofibrinous pericarditis depend are:

1. Feeling of oppression or peculiar tension over the cardiac region with a sense of anxiety.

2. Pain, spontaneous, often nocturnal, noticed most frequently over the heart, but also within the chest, radiating at times into the abdomen near the navel, also to the back, the left shoulder and even up to the left side of the neck. The pain may be increased by pressure at times and there is apt to be tenderness just below the left nipple in association with it. Since this tenderness also occurs in many patients with beginning decompensation and dilatation of the ventricles, not too much stress must be laid on it. Pain is also often markedly increased by movement, deep inspiration, swallowing and cough. In some patients pain is entirely absent.

3. Marked cardiac irritability with abnormal increase in the heart-rate on change in position or on exercise. Irregularity is common, evidently suggesting the involvement of the nervous apparatus. This irritability is apt to persist for some time even after the acute process seems to have subsided.

4. A friction rub, diastolic, systolic, or both, heard most clearly at some particular point over the heart and variable at times with change in position. Reliance cannot be placed on friction alone without other evidence, since it may come from the so-called *Sehnen-Flecken,* the significance of which is still a matter of dispute.

5. Fever is not always present, but pericarditis is often the cause of a cryptic fever. There may also be evidences early of a marked cardiac disturbance—dyspnea, cyanosis, etc., but these are not distinctive of the condition.

It is encouraging that we see occasionally a pericarditis which rapidly disappears. It is the only evidence at times of an infection probably with the *Streptococcus rheumaticus.* It is also striking that a complete return to normal can take place even when there is most marked inflammation of the pericardium. McPhedran describes a patient in whom there was apparently complete recovery from a well-marked fibrinous condition which distended the pericardium so much that it led to a number of fruitless aspirations. Just why some patients recover readily without apparent damage while others, in whom evidently the etiology is the same, are left with adhesions, even obliteration of the sac itself, is quite unknown. The amount of involvement of the surrounding tissues, particularly the myocardium and endocardium and pleura, no doubt plays a prominent part in the clinical course of many of these patients, and evidence should always be sought in pericarditis for such involvement. The main therapeutic indications are to give physical rest, combat the local inflammation, and when rheumatism is suspected, administer promptly the salicylates in quantity. The experience of Eichhorst, who describes the prompt relief seen in patients with pericarditis without other treatment than the salicylates and without further disease manifestations, has no doubt been shared by all of us.

LOCAL MEASURES

An ice-bag applied at intervals is probably the most effective whenever the heart-action is markedly accelerated. Romberg doubts the wisdom of its use in cases with a rheumatic origin, and the work of Rosenow showing the favorable effect of low temperature on the growth of *Streptococcus rheumaticus* indicates the soundness of his belief. It is difficult to state whether the favorable effect of the cold is due to the general influence of the lowered temperature on the activity of the inflammatory process or is the result of a vasomotor reflex. Heat gives more relief in certain patients, particularly the aged and asthenic. The application of leeches, painting over the heart with tincture of iodin, the use of Spanish fly blisters, either the large ones recommended by Bamberger or the numerous small blisters advised by Caton, have often proved of marked value in my experience. The galvanocautery is a satisfactory form of counter-irrita-

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7. Cassaet, E.: La péricardite postérieure, Paris, Masson et Cie., 1914.

tion. In general, it is most important for the patient to be put on a simple diet, to be given salines so as to avoid strain at stool, to be kept in partially upright position and above all to have the pain in the chest relieved by some form of opium. Morphin hypodermatically may be necessary, but since it often produces subsequent vomiting with strain on the heart, it is better to use regularly suppositories of opium, hyoscyamus and belladonna when they prove effective. Veronal must be used with great care in severe pericarditis, as in fact in all cardiac lesions, since at times it has a marked depressing effect on the heart. It is most important in this connection to remember that patients presenting various stenocardiac evidences, particularly when they are non-smokers, not of neurasthenic or hysteric habit and when fever is present, should be investigated for the pericardial rub that may clarify the picture. Stimulants should not be regularly given, but the usual ones, particularly caffein and camphorated oil, should be available for the sudden emergency which is apt to arise in any patient with severe pericardial inflammation. Quinin is often of value when there is a high temperature in pericarditis. With signs of decompensation, digitalis is to be used. Some have thought that its effect in increasing the force of the systole might also interfere with the formation of adhesions, but it is difficult to judge whether a rapid rate or a forcible beat is most effective in this particular.

ACUTE PERICARDITIS WITH EFFUSION

Treatment.—Here also early recognition is of greatest importance. The marked change in the elasticity and extensibility of the pericardium when it is the site of inflammatory processes produces such conditions that the experiments of Rotch,[8] Ebstein[9] and many others are not a criterion as to what may happen in a pericardium in which effusion is taking place. The greatest difficulty is the confusion with dilatation of the chambers of the heart and the fact that clinical experience and such experiments as those of François Frank[10] have shown that the effect of a large effusion on the heart is similar to that of the vasomotor paralysis seen at times in acute infections.

Early Diagnosis.—The surest sign in doubtful cases is the gradual increase of the cardiac dulness with the coalescence of the borders of the absolute and relative areas of cardiac dulness. With this there is often the somewhat characteristic percussion figure of a blunt triangle with the base below and the left border extending beyond the apex-beat, an obtuse angle of dulness at the right cardiohepatic junction and muffled heart-sounds often with friction over the left ventricle. Roentgen-ray observations are often of much value. The danger of the sudden increase in the amount of fluid must be recognized when the pulse becomes rapid, small and irregular with marked dyspnea, for sudden paralysis of the heart is possible. The general and local symptoms are often alike in both purulent and simple effusion, and in both effusions may be present without physical signs.

The only satisfactory treatment for such effusions, either when acute and menacing or when they fail to absorb after two weeks, is aspiration. Treatment by diaphoretics, purgation and diuretics may be carried on with very great care if the amount of fluid is not great, and as it disappears often, they may seem at times to be effective. The tolerance of the heart for large amounts of fluid in the pericardial sac when it forms slowly is remarkable.

Aspiration.—Numerous studies have been made as to the best method of aspirating the pericardium. It now seems most probable that even in large exudates there may be only a very thin layer of fluid between the heart and the chest wall, or the heart may be entirely uncovered anteriorly, not showing the sinking due to its higher specific gravity that has been so often described. There have been many changes in the technic recommended. The methods of Dieulafoy,[11] Schaposchnikoff,[12] Aporti and Figaroli,[13] De Lorme and Mignon,[2] Curschmann and others are all at variance. We can safely say that aspiration should be preceded by puncture with a small syringe and that it should be, if possible, done in the fifth interspace about 1 inch inside of the area of absolute cardiac dulness. Here there is some danger of going through the pleura, but usually it is adherent. The danger of puncturing the heart except in the strong left ventricle is insignificant. When there is marked dulness to the right of the sternum, puncture can be made there, but the danger is greater owing to the thinner wall of the right ventricle. It is a safer procedure to make a small incision in the skin under local anesthesia if necessary as deep as the pericardium when a pyopericardium seems probable. Aspiration is best done with a very sharp trochar of the Curschmann type, draining either by siphon, syringe or aspirator. A curved trochar can be used to reach the posterior pericardium, or better still a fine rubber catheter passed through the trochar to explore the cavity. The character of the effusion as discovered by the exploratory puncture is of great importance in deciding on the treatment which should be adopted. Barkan and Lucas[14] recommend the same treatment for pyocardium as for empyema. If a distinctly purulent fluid is obtained, incision and drainage should be done promptly, laying bare the pericardium under the cartilage of the fourth or fifth rib and making a careful opening without going through the pleura. The mammary arteries can be tied if necessary. The presence of hemorrhagic fluid does not necessarily mean that there is a tuberculous or malignant condition present, as the capillaries of the pericardium are apt to be broken readily in the adhesions which are torn by the movements of the heart. The removal of a small amount of nonpurulent fluid is often sufficient to stimulate the absorption of the rest, but as much as possible should be withdrawn. The fact that very thick serofibrinous exudates may simulate fluid, and that pleurisy with effusion is often likewise present, should be borne in mind.

Our present information does not warrant us in injecting remedial substances into the pericardial sac after the withdrawal of simple effusions, and great care should be used even in tuberculous pericarditis in injecting foreign substances such as iodin and formaldehyd because of the possibility of damaging the nervous mechanisms of the heart with possible collapse. The chronic forms of pericarditis with effusion are to be handled about as are the acute ones except that the measures used can be somewhat more radical.

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[8] Rotch, T. M.: Absence of Resonance in the Fifth Right Intercostal Space Diagnostic of Pericardial Effusion, Boston Med. and Surg. Jour., 1878, xcix, 389.

[9] Ebstein: Discussion of Rotch's Sign, etc., Virchows Arch. f. path. Anat., 1892, cxxx, 418.

[10] Frank, François: Recherches sur le mode le production des troubles circulatoires dans les épanchements abondants du péricarde, Gaz. hebd. de méd., 1877, xiv, 455.

[11] Dieulafoy: Traité de l'aspiration des liquides morbide, Paris, Masson et Cie., 1873, p. 264.

[12] Schaposchnikoff: Zur Frage über Pericarditis, Mitt. a. d. Grenzgeb. d. Med. u. Chir., 1897, ii, 86.

[13] Aporti and Figaroli, P.: Zur Lage der akut entstandenen Ergüsse im Herzbeutel, Centralbl. f. inn. Med., 1900, xxi, 737.

[14] Barkan, H., and Lucas: Acute Suppurative Pericarditis in Infancy, Boston Med. and Surg. Jour., 1912, clxvi, 444.

Pericarditis with Adhesions. — The treatment depends largely on how exact a diagnosis can be made in a condition that is usually not recognized. As Tornai[15] has pointed out, these patients all present individual characteristics since there is marked variance in the adhesions, their direction and their strength. A few patients show the depression on deep inspiration which he calls "inspiratory funnel-breast," "Complete obliteration of the pericardium may occur without clinical evidences" (Smith[16]), but there are apt to be some signs of cardiac involvement and decompensation whenever adhesions are of the type that cause symptoms. This is apt to be manifested particularly by enlargement of the liver.

The Roentgen ray at times gives valuable evidence of the extent and course of the adhesions. In some patients the pain when the pericardium is adherent is similar to that of true angina pectoris. In acuter attacks this has been ascribed to the inflammation extending to the cardiac nervous mechanism, and these symptoms may be grave enough to be followed by death, although usually the pain appears only on exertion or on exposure to cold, or is a manifestation of beginning decompensation. Unfortunately there is apt to be associated with many cases of pericarditis a certain amount of myocardial change; but this is not necessarily true, as the myocardium often remains intact unless a secondary hypertrophy and dilatation follows the resulting pericardial adhesions.

A few adhesions probably mean but little, and can be regarded as the natural scar following inflammation; but when they become thick and firm and interfere with either ventricle or auricle, or lead to obliteration or involve the mediastinum or neighboring pleura, they cause marked disability. This is particularly noticeable when they involve the great vessels running from the heart. Taylor has shown that about one-third of these patients show pleural adhesions.

Pain when present is often difficult to control, but is frequently relieved by such remedies as the salicylates (aspirin, etc.), with local warmth and physical rest. Deep breathing and moderate exercise at the proper periods are probably of value in preventing adhesions both of the pericardium and the pleura, and also in bringing about their destruction by stretching the connective-tissue cells.

When the external adhesions are so extensive that systolic retraction of the intercostal spaces (Broadbent's sign) or systolic retraction of the thorax over the heart is noticed, operative measures should be considered, since when the adhesions are external they can be dealt with surgically, as undoubtedly could also adhesions between the epicardium and the sac provided they were recognized and localized.

If we can eliminate aortic stenosis and general atheroma as causes of the retraction, an early operation, the so-called "cardiolysis," which has been brought into more extensive use by Brauer,[17] is in order. His reports are quite satisfactory, and a recent one by Delagenière[18] of thirty-eight cases in which thirty-one gave good results is worthy of attention. The mechanical interference with the cardiac chambers is often of the greatest consequence. The amount of damage done is greater if the myocardium is at the same time involved. When the endocardium is affected, the opportunity for surgical relief is not so great, but nevertheless may be valuable in reducing disability. Whether or not the adhesions interfere with the diastole or systole is not important. The Brauer operation does not require penetration of the pericardial sac, but under local or general anesthesia the cartilages of the fourth, fifth, sixth and seventh ribs for from 10 to 12 cm. from the sternum are removed. The sternum is not disturbed. The rib periosteum can be removed or not, according to the condition. Its removal prevents bone regeneration, but increases somewhat the danger of the operation. The results obtained depend largely on the extent of the adhesions and the condition of the cardiac muscle.

It seems clear that we have in Brauer's method or in some one of the other forms of operative relief from these adhesions a method of prolonging life which should be tried much more often than is at present the rule. Early diagnosis of the condition before marked secondary myocardial changes have taken place is again here of importance. When we have a definite retraction of the lower left ribs with systole with the cardiac dulness not changed by respiratory movement and with the lateral postural movement of the heart absent, especially if the Roentgen-ray evidence fits into the picture, we can expect good results from the operation. The time may come when a direct intrapericardial operation will be desirable, but now certainly some such operation as that of Brauer is the one from which the best results can be obtained. In this operation it is desirable to make a small opening into the pericardium to be sure that the diagnosis is correct before the more extensive removal of the ribs is practiced.

CONCLUSIONS

1. The accessibility of the pericardium makes local treatment valuable and surgical treatment possible, and leads to the hope that further study may permit the application of remedies directly to the interior of the acutely or chronically inflamed sac. Induced pericarditis in animals offers a good field for study along this line.

2. Early diagnosis of dry or serofibrinous pericarditis permits of the most effective treatment and must be based largely on (*a*) vague feeling of oppression in the chest or actual pain, (*b*) cardiac irritability and (*c*) friction rub.

3. Early aspiration, preferably to the left of the nipple-line, is of value in the diagnosis of pericardial effusion, and tapping should be practiced when the heart-action is markedly disturbed from apparent increase in intrapericardial pressure.

4. The Brauer method should be more often used in patients with the evidences of pericarditis with adhesions and with early signs of cardiac hypertrophy

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[15] Tornai, Josef: Beiträge zur Symptomatologie der adhäsiven Pericarditis, Berl. klin. Wchnschr., 1913, No. 39, p. 1792.

[16] Smith, William H.: Chronic Adherent Pericarditis: A Study of Sixty-Two Cases, The Journal A. M. A., Sept. 6, 1913, p. 739.

[17] Brauer, L.: *Die Behandlung der Herzbeutelentzündungen und Verwachsungen*, Hamburg. med. Ueberseehefte, 1914, i, 7.

[18] Delagenière, H.: *De la péricardiolyse dans certaines affections cardiaques ou de la thoracectomie prépéricardique*, Arch. d. mal. du cœur, 1913, vi, 633.

or dilatation. It will often diminish disability and markedly prolong life.

5. Careful attention should be paid to the differentiation of pain in the region of the heart due to pericarditis (acute or chronic) from true angina pectoris, since the prognosis is necessarily so different. Careful and repeated examinations for a friction rub should be made over the whole cardiac area in patients with precordial pain.

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ABSTRACT OF DISCUSSION

Dr. Samuel James Meltzer, New York: In pericarditis it may be necessary to make a wide opening or to remove, if necessary, one or two ribs and sometimes five ribs. I had an experience some eighteen years ago with a case in which we did not agree on the location of the trouble. I said it was pericarditis with effusion and my consultant said it was empyema and the patient was operated on. Two weeks later when seeing the patient I said the pleural cavity had not been opened but instead the pericardium and during these two weeks it was being washed out twice a day with corrosive sublimate. The patient died three weeks later, but it gave me an idea as to how much the pericardium can and will *stand.*

THE ABUSE OF NORMAL SALT SOLUTION[*]

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The presence of a relatively large proportion of sodium chlorid in our bodies harks back to the composition of sea-water at the time when our ancestors were ameboid inhabitants of the primeval ocean. To a certain amount of sodium chlorid our organisms are habituated, and that amount has become essential to our well-being; larger amounts, however, are toxic unless promptly eliminated.

The regulation of the inorganic composition of the blood was the primal function of the simple organs from which our kidneys have developed. The elimination of the waste-products of metabolism came later. Our kidneys now regulate blood concentration and also the proportion of the various ions, preserving the acid-base equilibrium; and, in addition to these primal functions, the kidneys must now dispose of large amounts of organic waste matter—toxic substances of endogenous and exogenous origin.

These waste products are often far more toxic than the excessive amounts of inorganic salts. Nevertheless, since the primal function of an organ remains ever its predominant activity, if the inorganic balance in the blood is disturbed, that disturbance receives the more or less exclusive attention of the kidneys, though organic acids and toxins may in consequence accumulate in the blood-stream.[1] Hence the danger of flooding the organism with inorganic salts, which peremptorily demand prompt elimination. Hence, also, the fact that an excess of sodium chlorid may cause symptoms which vary in accordance with the particular toxins which happen to be retained, because the kidney function is more or less monopolized by the elimination of the excess of sodium chlorid.

A harmful amount of sodium chlorid in the human body results more frequently from the employment of normal salt solution. This solution is used for the following purposes:

1. For increasing the volume of the blood, as after severe hemorrhage or prolonged starvation.
2. To wash out toxins from the system, as after anesthetics, gas poisoning, and certain infectious or toxic diseases, by raising the blood-pressure, stimulating the action of the kidneys, etc.
3. To increase the resistance of the organism to disease.
4. To counteract the effects of shock.
5. By enteroclysis, to relieve thirst when water cannot be taken by the mouth.
6. For carrying out the so-called Fischer treatment of nephritis.

In the latter case, the solutions used are rendered still more dangerous and toxic by the increased percentage of sodium chlorid.

The solutions used for the foregoing purposes may be introduced into the system by the following routes: first, by the mouth and stomach; second, by the rectum or colon—the "Murphy drip"; third, by hypodermoclysis; and fourth, by direct infusion into a vein.

Because in certain postoperative cases the patients were found to stand in need of an artificial increase to the blood-serum, it was decided to give them water by the bowel. Because living laboratory specimens *in vitro* did better in isotonic solutions and because it was believed that the mucous membrane would be irritated by contact with any solution that was not isotonic, sufficient salt was added to the water to render it isotonic, for enteroclysis. With a rapidity which is hard to understand, the postoperative administration of large amounts of salt solution by the Murphy method has become almost routine in a large number of surgical clinics, with far too little regard to the needs of the individual case and the dangers involved in this procedure. The argument seems to be, if it is good in certain cases, why not give it to all and thus run no risk of missing any cases that really need it?

While evidence of the harmful effects of sodium chlorid has been accumulating, and while the conviction has been growing in the minds of many that this treatment is greatly overdone and productive of much harm,[2] Dr. Trout[3] has demonstrated by a series of over two thousand cases that ordinary hydrant-water is better than salt solution for such treatment. More water is absorbed, the postoperative thirst is more quickly relieved, and the toxic effects of salt are avoided.

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[*] Read before the Section on Pharmacology and Therapeutics at the Sixty-Fifth Annual Session of the American Medical Association, Atlantic City, N. J., June, 1914.

[1] Macallum, A. B.: The Inorganic Composition of the Blood . . . and Its Origin, Proc. Roy. Soc., B, 1910, lxxxii; The Ancient Foundations of Heredity, Can. Med. Assn. Jour. January, 1911.

[2] Rössie: Gibt es Schädigungen durch Kochsalzinfusion? Berl. klin. Wchnschr., Sept. 18, 1907.

Blum: Les dangers des injections intraveineuses alcalines: effets toxiques du sodium, Sem. med., 1911, xxxi, 433; abstr., The Journal A. M. A., Oct. 21, 1911, p. 1408.

Geyser: The Use and Abuse of Normal Salt Solution, Am. Med., January, 1914, p. 57.

Christian: Experimental Nephritis, Boston Med. and Surg. Jour., 1908, clviii, 416.

Lepine, J.: Hystérie, insuffisance rénale, rétention chlorurée, Rev. de méd., September, 1911.

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Burnett, Theodore C.: On the Production of Glycosuria in Rabbits by the Intravenous Injection of Sea Water Made Isotonic with the Blood, Jour. Biol. Chem., 1908, iv, 57.

Guthrie, C. C.: The Effect on the Kidneys of Temporary Anemia, Alone and Accompanied by Perfusion, Arch. Int. Med., March, 1910, p. 232; Quart. Bull. Med. Dept. of Washington Univ., December, 1908, p. 47.

Bain, John: Excessive Ingestion of Salt Producing Oedema, Brit. Med. Jour., Oct. 5, 1912, p. 880, Stevenson, A.: Brit. Med. Jour., Dec. 28, 1912, p. 1749.

[3] Trout: Proctoclysis, The Journal A. M. A., May 4, 1912, p. 1352; Southern Med. Jour., 1913, No. 12, p. 791; Surg. Gynec. and Obst., May, 1913, p. 560; Progr. Med., June, 1914.

It should go without saying that neither of these methods of postoperative enteroclysis should be employed without special indications, and then only in the absence of edema or symptoms of threatened cardiac failure from overburdening of the cardiovascular system. In toxic conditions with no evidence of cardiac insufficiency an increase in the mass of circulating blood, with the consequent increased activity of the kidneys, is certainly beneficial. The same is true when the toxic effects of the anesthetic persist unduly. When there is prostration from loss of blood during the operation or from diminution of the quantity or quality of the blood before operation, as from persistent vomiting or diarrhea, toxic conditions or inanition, an increase of the volume of the blood-stream is strongly indicated. In true shock, that is, vasomotor paralysis, particularly of the splanchnic vessels, often accompanied by acute dilatation or overdistention of the right heart, the addition of any considerable amount of fluid to the afferent vessels seems to me to be distinctly contra-indicated. In such cases the flickering spark of life may be snuffed out by the extra load put on the heart. Postoperative thirst can be relieved by very moderate amounts of a suitable solution by enteroclysis. This does not involve the dangers incident on the employment of large amounts of fluid.

The classic demonstration of Widal and the work of Minkowski, von Noorden, Friedrich Müller, Kraus, Magnus Levy, H. Strauss and many others have demonstrated beyond cavil a definite relation between chlorid retention and edema—the inability of damaged kidneys to eliminate urine high in sodium chlorid, the consequent chlorid retention, water retention, and toxic effects on the tissues—overburdening the cardiovascular system and producing more or less general edema.[4]

Just as this useful knowledge of chlorid metabolism was beginning to make itself felt in the treatment of cardiorenal cases, postoperative and other toxic cases, a book appeared, written by a professor of physiology who is also an internist, and endorsed as a prize essay by a body of judges whose names rightly demand respect.[5] This book calmly disregarded all the work just mentioned and has seemed to stem the beneficent spread of knowledge and plunge the medical profession with renewed enthusiasm into fallacious practices. Cardiorenal cases that we had come to believe were suffering from chlorid retention, water retention, and many consequent evils, are now treated exclusively by very many conscientious physicians with alkalies, sodium chlorid and excessive amounts of water. Protests from research laboratories have been published by Henderson, Palmer, Newburgh,[6] Moore[7] and Sellards[8] but these are slow in reaching the circles where the harm is being done.

The mechanical effect of the introduction of a large amount of any isotonic or hypotonic solution to the blood-stream, in cases in which heart is almost spent or in which hypertension has reached a dangerous degree, may promptly lead to disaster. An example of each of these two varieties has come under my personal observation within the past year.

Case 1.—To a patient with a double pneumonia, in an extremely toxic condition but with apparently a good heart and no evidences of edema of the lungs, an isotonic intravenous infusion was ordered. The intern who took the order was doing double work and did not get around to this case for four or five hours. The patient then had edema of the lungs and tracheal râles. The infusion, however, was given without consulting the physician who gave the order and the patient promptly died.

Case 2.—A patient with advanced cardiovascular fibrosis, with a systolic pressure of 220, was found by the physician whom he consulted to have albumin and casts. A flushing out of the kidneys was decided on and 3 quarts of water and 3 quarts of milk were ordered to be taken in each twenty-four hours. In about six weeks the patient began to bleed from the nose, and this bleeeding continued for twelve days off and on, causing great anxiety and necessitating repeated plugging of the anterior and posterior nares. In this case the profuse and continued hemorrhage from the nose probably saved the patient's life for the time being.

A hypertonic solution, however, provided it is non-toxic, may do yeoman service in such a case, lessening the heart's load by its dehydrating and diuretic effects.

If the case really needs a prompt addition to the blood-serum, the most prompt, direct, scientific and comfortable way of bringing this about is by venous infusion. Thus we avoid the uncertainty of absorption from the digestive tract, and the great discomfort of hypodermoclysis.

The advent of salvarsan has given a great impetus to intravenous medication and widely popularized its technic. But when we turn from enteroclysis to the more scientific intravenous infusion we naturally meet new dangers, which certainly have not as yet received proper consideration. Water for intravenous use must be not only sterile but also non-toxic. The fact that water has been freshly distilled or sterilized by boiling does not prove that it is innocuous. It may contain many harmful products of distillation or toxic substances set free from killed bacteria. The original source of the water should receive careful consideration. Water containing much organic matter should not be used for distillation if any other can be obtained. If it must be used, porcelain filtration should precede repeated distillation. The temperature of the solution as it enters the vein is also highly important. A thermometer should be inserted in the tubing near the needle, in order that the temperature of the solution as it enters the circulation can be accurately controlled.

The beneficent effects of directly increasing the blood-serum in many surgical conditions is well established and, in strictly medical cases, Osler and many others attest its value. I have myself seen good effects follow its use in pneumonia, typhoid fever and other conditions too often to doubt its efficacy.

While recognizing the great value of artificial serums in the way of deintoxication, diuresis, cardiac stimulation, etc., I can find no justification for the sodium chlorid except in the case of a patient actually suffering from chlorid starvation—as possibly after a too vigorous application of the salt-free diet—or for control of obstinate recurrent pulmonary hemorrhage.

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[4] Borchardt: Deutsch. med. Wchnschr., 1912, xxxviii, 1725. Smith, Richard M.: Recent Contributions to Our Knowledge of Nephritis, Am. Jour. Dis. Child., May, 1914, p. 389.

[5] Fischer: Nephritis, 1911 Cartwright Prize Essay, New York, John Wiley & Sons, 1912.

[6] Henderson, Palmer and Newburgh: Jour. Pharm. and Exper. Therap., 1914, v, No. 5. Newburgh: Boston Med. and Surg. Jour., 1913, clxix, 40.

[7] Moore, A. R.: Fischer's Theory of Edema and Nephritis, The Journal A. M. A., Aug. 10, 1912, p. 423; Edema and Nephritis, ibid., Feb. 1, 1913, p. 315; A Controverted Theory of Nephritis, ibid., June 20, 1914, p. 1971.

[8] Sellards: The Essential Features of Acidosis, etc., Johns Hopkins Hosp. Bull., May, 1914, p. 141. See also review of Dr. Fischer's book, Arch. Int. Med., May, 1912, p. 6[illegible]7. Comment on G. Salus, Biologische Versuche mit Organplasma, Biochem. Ztschr., 1914, lx, 1.

Haig[9] has recently asserted that a deficiency of sodium chlorid plays an important rôle in the etiology of neurasthenia and various associated conditions.

In dextrose, on the other hand, we have a substance which has been recognized by physiologists since the days of Claude Bernard as in the highest degree nontoxic, diuretic, nutritious and easily assimilated. If introduced slowly, either by enteroclysis or by intravenous infusion, in isotonic or hypertonic solutions, very large amounts will be utilized by the organism without the occurrence of glycosuria, or with the loss through glycosuria of only a negligible percentage of the sugar administered.

In the summer of 1907, at the suggestion of my associate, Dr. James P. McKelvy, I substituted glucose solution for the usual normal salt solution in my wards at the West Penn Hospital. We were running a large number of typhoids, from sixty to seventy-five per month, with a mortality of from 9 to 10 per cent. Enteroclysis was administered in all cases in which condition of the patient seemed to indicate such an addition to the blood-stream. We noted a decided advantage from the substitution of glucose for the sodium chlorid previously employed. If my memory serves me, glycosuria was not noted in any of the cases.

In March, 1909, Dr. McKelvy carried out the following experiment at the Allegheny General Hospital, which I shall report in full, as it has never been published:

Case 3.—A patient aged 48, weight 142 pounds, was admitted for bronchial asthma, in an emaciated condition, with moderate emphysema, arteriosclerosis and slight cardiac hypertrophy. He was kept in bed and fed by mouth milk and other liquids, to which were added milk-sugar. Enteroclysis was given continuously and consisted of 15 per cent. glucose solution. The expelled fluids were collected in a rubber bed-pan, the twenty-four hour amount mixed and measured and the sugar determined by fermentation. This was continued for forty-eight hours. The stools were saved and analyzed for sugar for several days. For the first *twenty-four hours* following the test the amount was 35 gm.; after that it was negligible. The record of sugar absorbed is given in the accompanying tabulation.

The urine at no time showed sugar, although the patient absorbed 1,326 gm. and 1,237 gm. on the first and second days, respectively. If we take the blood-weight of a 70-kg. man as about 5,000 c.c., then 1,326 gm. would represent 26 per cent. of the blood-weight absorbed in twenty-four hours, or 1.08 per cent. in one hour, or 0.18 per minute. It represents over 5,400 calories in twenty-four hours.

If we assume that liver, muscles and blood were drained of sugar, the amount absorbed would restore, during the first day, their normal content—liver 150 gm., muscles 150 gm., blood 10 gm., and still leave over 1,000 gm. to be accounted for.

Recently a great deal of attention has been paid in Europe, particularly in France, to the use of hypertonic solutions of dextrose intravenously. Enriquez[10] reports the use of a 30 per cent. solution intravenously in more than fifty patients, *giving from 250 to 300* c.c., repeated three or four times in the twenty-four hours. The essential feature in the technic is that the hypertonic dextrose solution enters the blood-stream very slowly, one hour being occupied for the infusion of from 250 to 300 c.c. Enriquez asserts that when thus given the glycogen is stored in the liver and muscles, including, of course, the myocardium, and the glycemia varies within normal limits rarely, and then only for short periods passing the three parts per thousand, which was found by Claude Bernard to be the point at which glycosuria would appear. I might mention here that Wilenko[11] asserts that the presence of large amounts of sugar in the blood modifies the permeability of the kidneys for sugar, the effect being first a transient increase, and then a decrease of renal permeability; also that sugar solutions affect the osmotic pressure much less than salt solutions.

Enriquez found 4 or 5 gm. of glucose at the most in the urine during the first two hours after infusion, and none later. Even in two cases of alcoholic cirrhosis with ascites the result was the same. In none of the cases was sugar found in the feces. Examination of the blood showed no evidence of hemolysis, no change in the red blood-corpuscles, no icterus, and no blood-pigment in the urine. Some of his patients received as many as thirty intravenous infusions.

RECORD OF ABSORPTION OF SUGAR IN CASE 3

FIRST DAY

Solution administered by enteroclysis, containing 15 per cent., or......	8,192 c.c.	1,200 gm. of glucose
Solution expelled containing 5.75 per cent., or......	7,496 c.c.	430 gm. of glucose
Balance of glucose absorbed by bowel..		770 gm.
Sugar in milk foods.......	90 gm.	
Lactose by mouth.........	466 gm.	
Total sugar by mouth.....		556 gm.
Glucose by rectum........		770 gm.
Total sugar absorbed.....		1,326 gm.

SECOND DAY

Solution administered by enteroclysis, containing 15 per cent., or.....	7,650 c.c.	1,147.50 gm. of glucose
Solution expelled containing 6.1 per cent. or......	7,810 c.c.	476.41 gm. of glucose
Balance of glucose absorbed by bowel		671.09 gm.
Sugar absorbed in food....	86 gm.	
Milk-sugar by mouth......	480 gm.	
Total sugar by mouth.....		566 gm.
Glucose by rectum........		671 gm.
Total sugar absorbed......		1,237 gm.

Urine	*Before test*	*Second day of test*
Amount in 24 hours	2,100 c.c.	1,800 c.c.
Total N	10.5 gm.	12.30 gm.
Urea	15.9 gm.	21.60 gm.
Urea N	7.4 gm.	10.08 gm.
Percentage of urea N	70 plus	82 plus

Microscopically, occasional hyaline cast.

Estimating the caloric value of dextrose as four to the gram, one can see at a glance the great nutritive value of this treatment. Enriquez lays great stress on the dangers of chlorid retention when salt solutions are used and on the fact that dextrose in hypertonic solutions may be used in cases in which any isotonic solution, and particularly isotonic saline solution, is contra-indicated, as in cases of general edema or edema of the lungs, with tracheal râles, because the dextrose is absolutely non-toxic and because the hypertonic solution actually draws water from the tissues into the blood-stream. He reports in detail a case of bronchopneumonia in a man aged 67, with a temperature of 104 F., pulse 150 with fetal rhythm, tracheal râles, carphologia, and urine about 200 c.c. in twenty-four hours. This patient promptly improved as soon as the hypertonic dextrose infusions were instituted. In another case, one of carbonic monoxid poisoning, the patient, who was brought in cyanosed, semicomatose, with rapid thready pulse, high temperature, rigidity of the neck, etc., received a liter of the 30 per cent. solution of dextrose intravenously every day for a week, with recovery. The remainder of his cases included cases of advanced uremia with oliguria, acute inanition, profound prostration in typhoid fever, postoperative conditions, and as a preparation for operation in desperate cases. In certain cases of cardiac edema, with hyposystole or asystole, the intravenous infusion was preceded by phlebotomy. In these cardiorenal cases, he noted a prompt and very satisfactory diuresis, together with a marked improvement of the tone of the heart-muscle. He therefore asserts that all cases in which the clinical danger is measured by the diminution of the urine are benefited by this treatment.

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[9] Haig: Med. Rec., New York, 1914, lxxv, 1017.

[10] Enriquez: Presse méd., Feb. 14, 1914; abstr., The Journal A. M. A., March 28, 1914, p. 1054.

[11] Wilenko: Zur Wirkung intravenöser Einspritzungen, u. s. w., Arch. f. exper. Path. u. Pharmakol., 1911, lxvi, 143.

Beddard[12] asserts that dextrose is an active diuretic, which, though it diminishes the percentage of sodium chlorid in the urine, increases the total elimination.

Fleig[13] states that of all known substances, glucose is by far the least toxic, much less toxic than sodium chlorid and far more diuretic and at less expense to the kidneys. To the diuretic effect of lavage of the isotonic solution, the hypertonic solution adds diuresis by dehydration of the tissues. Accompanying this there must go on a deimpregnation of the tissues as regards waste products and toxic substances. When there is no particular indication for the dehydration or deintoxication of the tissues, isotonic solutions may be used, but in all urgent cases hypertonic solutions are strongly indicated. Fleig asserts that the direct stimulating effect on the heart-muscle by the dextrose and its effect on the liver, increasing the antitoxic function of the latter organ, make it particularly indicated after anesthetics, and for that purpose he advises the addition of a small amount of calcium chlorid to the solution—from 0.2 to 0.4 per cent. He has noted relief of postoperative vomiting after the use of dextrose. He prefers isotonic dextrose solutions to salines as a diluent for salvarsan in either acid, alkaline or neutral solutions. This permits its administration in cases in which the condition of the heart or kidneys contra-indicates the use of sodium chlorid.

When the organism has been already dehydrated by vomiting, diarrhea, or hemorrhage, Fleig advises the use of a hypotonic solution of dextrose—20 gm. to the liter, or 40 gm. of lactose. In these cases, a hypotonic solution of sodium chlorid may be employed if there is no contra-indication in the form of a nephritis. In cases of acodisis, he recommends the combination of dextrose with sodium bicarbonate—from 2.5 to 10 per cent. dextrose, and from 0.7 to 3 per cent. sodium bicarbonate.

CONCLUSIONS

1. The administration of any artificial serum as routine postoperative practice is questionable therapeutics.
2. Too much water may fatally embarrass the heart.
3. Too much salt may fatally embarrass the kidneys.
4. When fluids cannot be taken by the mouth, thirst may be relieved by tap-water or by isotonic dextrose solution given by enteroclysis. The dextrose solution is preferable when there is danger of acidosis and in all cases of inanition.
5. When there is a distinct indication for an artificial addition to the amount of the circulating blood-serum, this may best be accomplished by the use of dextrose solution: isotonic (5.1 per cent.) by enteroclysis; isotonic, hypertonic (up to 30 per cent.), or hypotonic (2 per cent.), by intravenous infusion.
6. There are no contra-indications for the use of dextrose, but often serious contra-indications for the use of saline solutions.
7. In all urgent cases the intravenous method is preferable.
8. Greater care should be exercised to see that all water used intravenously is not only sterile but also non-toxic.
9. In medical practice artificial serums should be more frequently employed: (1) isotonic or hypotonic (*a*) after severe hemorrhage, exhaustive vomiting, or diarrhea; or (*b*) in cases of extreme inanition; (2) hypertonic (*c*) in toxemic cases, including eclampsia and uremia; (*d*) in cases of oliguria with threatened uremia; (*e*) to combat acidosis, or (*f*) in toxic states, as after anesthetics, gas, morphin poisoning, etc.
10. Dr. Fischer's theory of nephritis is a gratuitous hypothesis and his recommendations as to treatment are not justified either by established physiologic facts or by clinical experience.

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ABSTRACT OF DISCUSSION

Dr. John F. Anderson, Washington, D. C.: It is advisable to have distilled water. Is there any difference in the use of freshly distilled water or water that has been distilled for some time?

Dr. Ray L. Wilbur, San Francisco: My experience is similar to Dr. Litchfield's with regard to these solutions. Some of the same precautions concerning the use of serums apply to all forms of intravenous solutions. The recommendation we have had from Dr. Litchfield should not mislead physicians to use it too freely.

Dr. John A. Lichty, Pittsburgh: It is through Dr. Litchfield's work that I took up the substitution of glucose for normal salt solution. I think his paper is timely in calling attention to the routine use of normal salt in surgical clinics. I have for a long time noticed the appearance of acetone and diacetic acid in the urine in cases in which, for certain reasons, we starved the patient, as in gastric ulcer. Formerly I used rectal feeding but since knowing of the use of glucose I substitute this for other food by rectum. It is a question whether any good is being done by rectal feeding: I cannot answer this question except by experience. Since using glucose solutions in gastric ulcer I see less of the symptoms of acidosis in these cases, which I think is a strong recommendation of Dr. Litchfield's conclusions. I have had an experience which showed me this was the proper procedure: I saw, eight years ago, a case of hyperthyroidism. This patient apparently recovered and I did not see her again until one month ago when the symptoms were more marked—elimination of 6 ounces of sugar a day. I reduced the carbohydrates thinking thereby to control the sugar output. When I saw the patient later the sugar was 1 ounce a day and she was better and said she would rather go without the carbohydrates. Within twenty-four hours I was called and the patient had symptoms of diabetic coma. I felt responsible for the condition and gave her glucose to drink and per rectum. The pulse was 170; patient was delirious, and in an alarming condition. In thirty-six hours the symptoms changed, she was recovering from the attack, the pulse was 96 and she was feeling well. This is really the only case of diabetic coma in which I have ever seen recovery.

Dr. Lawrence Litchfield, Pittsburgh: We have tried to get the cleanest and purest water we could. Several years ago many of my patients, at my suggestion, put little stills in their houses, and the effect of distilling dirty river-water was sometimes quite astonishing. By passing the water through a Pasteur filter before distilling it, the product was of course greatly improved. The Pasteur filter, distillation and subsequent boiling will not necessarily remove all noxious substances from the water. Our custom is to get as pure a water as is possible and distill and redistill thoroughly before using. The giving of dextrose solutions intravenously is very simple.

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[12] Beddard: In Leonard Hill's Recent Advances in Physiology and Biochemistry, New York, Longmans, Green & Co., 1908.

[13] Fleig: Serums artificiels et médicament, etc., Gaz. d. hôp., 1912, p. 317; Bull. gen. d. therap., 1912, clviii, 575.

THERAPY OF CARDIOVASCULAR DISTURBANCES *

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The object of this investigation has been twofold: (1) to determine whether the poison of infectious diseases injures the vasomotor mechanism, and (2) to determine whether strychnin and caffein, both of which are commonly used to stimulate the cardiovascular apparatus, do actually have such an effect.

BLOOD-PRESSURE IN PNEUMONIA

Since 1899 clinicians[1] have believed that many of the grave symptoms and a large number of the deaths in pneumonia and other infectious diseases are directly due to failure of the vasomotor mechanism.

If it be true that grave symptoms and death in pneumonia are due to failure of the vasomotor apparatus, then it ought to be possible to divide pneumonics into two groups: (1) a group in which the vasomotor apparatus is intact, and (2) a group in which the vasomotor apparatus is seriously injured. In the first group blood-pressure measurements ought to form a curve which does not diverge widely from that for normal persons. In the second group the blood-pressure curve ought to be low in proportion to the gravity of the symptoms, and it should be very low indeed as death approaches. The blood-pressure curve ought to be the most reliable single measure of the state of the circulation in pneumonia, and a definite and exact indicator for our therapeutic efforts.

Weigert,[2] in 1911, studied the blood-pressure in a variety of infectious diseases, including pneumonia, and reviewed the work of earlier observers. His general conclusion is that one can establish no rule for the blood-pressure curve in pneumonia, and that consequently blood-pressure readings in pneumonia are of no prognostic value.

In contrast to this view is the statement of G. A. Gibson:[3]

> A pressure appreciably below the normal in pneumonia is invariably of evil omen and any considerable fall bodes disaster. When the arterial pressure, expressed in mm. Hg does not fall below the pulse-rate, expressed in beats per minute, the fact may be taken as of excellent augury, while the converse is equally true.

Newburgh and Minot have studied the blood-pressure in forty-five cases of pneumonia (1) with regard to the course of the systolic pressure in the fatal cases (nineteen cases) as compared with that of the persons who recovered, and (2) with regard to the working of Gibson's rule in these cases.[4]

The following conclusions have been reached:

1. The systolic pressure in the fatal cases tends to be higher than it is in the recoveries.
2. Low systolic pressures are not invariably of evil omen.
3. The rate of the pulse, and not the level of the pressure, is the chief factor in determining whether the pressure will fall above or below the pulse.
4. Prognostic inferences based on the relation of the level of the systolic pressure curve to the pulse curve (Gibson's rule) are wrong oftener than they are right in this series.
5. The course of the blood-pressure does not suggest that there is a failure of the vasomotor mechanism in pneumonia.

STATE OF THE VASOMOTOR MECHANISM IN PNEUMONIA

Romberg[1] and his associates gave lethal doses of pneumococci to rabbits. They then selected animals in various stages of the disease and recorded the effect on carotid blood-pressure of stimulation of the nasal and anal mucous membranes.

In normal animals and those only moderately sick, peripheral stimulation caused a very large rise in blood-pressure. In very sick animals the rise was much smaller, while in animals near death the strongest faradic currents applied to the mucous membranes caused no blood-pressure response. Since the myocardium was still intact, as alleged on the basis of other experiments by these authors, the failure of the blood-pressure to rise as the result of peripheral stimulation proved that the vasomotor center was paralyzed.

Porter and Pratt[5] have given rabbits lethal doses of diphtheria toxin. The vasomotor reflexes were then studied in all stages of the disease. The fall in general blood-pressure following stimulation of the depressor nerve and the rise in blood-pressure following stimulation of the sciatic nerve were measured. A normal response was obtained.

Porter and Newburgh have produced pneumonia in rabbits, cats and dogs.[6] When the animals were within a few hours of death, the vasomotor reflexes produced by stimulation of the depressor and sciatic nerves were examined. Even in animals about to die a normal response was obtained.

We conclude that it cannot be demonstrated that the poison of pneumonia impairs the function of the vasomotor mechanism.

STRYCHNIN

A. Broken Cardiac Compensation

The cases were studied in accordance with the following plan: The patients on entrance to the ward were placed on a diet of liquids and soft solids, and the liquids were limited to 1,000 c.c. in the twenty-four hours. If there was either sufficient dyspnea or cough to prevent sleep, morphin or codein was ordered. The bowels were moved with various cathartics. The weight was noted. Temperature, pulse and respirations were recorded twice daily. The twenty-four-hour fluid intake and urinary output were noted. The patients were kept in bed throughout the period of observation. For the first few days after entrance the clinical course of the affection was watched. As the result of this regimen many patients will entirely recover their compensation without the aid of digitalis. It is important to exclude all such cases from a series in which the effect of any given drug on the heart is being studied.

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* Read before the Section on Pharmacology and Therapeutics at the Sixty-Fifth Annual Session of the American Medical Association, Atlantic City, N. J., June, 1914.

* Aided by a grant from the Council on Pharmacy and Chemistry of the American Medical Association.

[1] Romberg, Pässler, Bruhns and Müller: Experimentelle Untersuchungen über die allgemeine Pathologie der Kreislaufstörung der acuten Infectionskrankheiten, Arch. f. klin. Med., 1899, lxiv, 1652. Pässler and Rolly: Experimentelle Untersuchungen über Kreislaufstörungen bei acuten Infectionskrankheiten, Deutsch. Arch. f. klin. Med., 1903, lxxvii, 96.

[2] Weigert, K.: Ueber das Verhalten des arteriellen Blutdrucks bei den acuten Infectionskrankheiten, Samml. klin. Vortr. (Volkmann's), 1911, p. 459, Inn. Med., p. 138.

[3] Gibson, G. A.: Some Lessons from the Study of the Arterial Pressure, Edinburgh Med. Jour., 1908, new series, xxiii, 17.

[4] For a detailed report of this work see Newburgh and Minot: Blood-Pressure in Pneumonia, Arch. Int. Med., 1914.

[5] Porter and Pratt: The State of the Vasomotor Center in Diphtheria Intoxication, Am. Jour. Physiol., 1914, xxxiii, 431.

[6] For a detailed report of this work see Porter and Newburgh: The State of the Vasomotor Mechanism in Pneumonia, Am. Jour. Physiol., 1914, xxxiii, and Newburgh: Arch. Int. Med., 1914, shortly to be published.

Only those patients who showed no persistent slowing of the cardiac or respiratory rates, no increased output of urine, and no loss of weight after three or four days were considered unimproved. Failure to observe this precaution may cause an error of as much as 50 per cent. The latter group was then given strychnin, and the effect, if any, on the pulse, respiration, urinary output, systolic and diastolic pressures, weight and subjective symptoms, noted.

Finally, a third period followed in which digitalis bodies and diuretics were given in order that the effect of strychnin might be compared in the same patient under otherwise uniform conditions, with the effect of remedies whose efficacy is established beyond doubt.

Eight cases of broken compensation were studied. The smallest single dose of strychnin was 1/30 grain, the largest 1/10 grain. No improvement occurred in any of the eight patients who were given the strychnin. Four of them subsequently recovered their compensation, following the administration of digitalis and diuretics.

Conclusions: It cannot be demonstrated that strychnin, even when given to the point of toxicity, has any beneficial effect on broken cardiac compensation.

B. Infectious Disease and Hypotensive Cases

In this group, the effect of single doses of varying size or of a number of doses given within a short period of time on the systolic, diastolic and pulse-pressure, on the rate and character of the pulse, on the respiratory rate and on the general condition was studied.

When judging the effect of any therapeutic procedure on the blood-pressure, one must thoroughly realize that moderate and even very large variations result from slight external stimuli of all sorts. For example: Zabel,[7] who investigated the causes for sudden changes in pressure, found that a superficial pin-prick caused a systolic rise of 72 mm. in one individual, and that the average rise following this stimulus lay between 11 and 30 mm.

Our readings were made under conditions far from ideal. The patients were nearly all exposed to the noise and bustle and changing temperature of an open ward. They were all sick, some of them desperately so, some of them had painful diseases, others were receiving subcutaneous medication every hour. Under such conditions, variations of 10, 15 or even 20 mm. are to be expected as the result of unavoidable external stimuli, and, unless very consistent, cannot be held up as evidence that the drug is increasing the activity of the vasomotor center or that any other effect peculiar to the drug has been produced. The same reasoning applies to the rate of the heart-beat.

The data were obtained from seven cases of lobar pneumonia, varying in type from mild to fatal, two mild and one severe typhoid, one fatal tuberculous enteritis, one severe general peritonitis, one fatal infectious colitis, one delirium tremens and one traumatic shock.

In a patient suffering from tuberculous enteritis, who showed a persistently low systolic pressure for several weeks — from 80 to 95 — and who was emaciated and very weak, the failure of 1/10 grain of strychnin to affect the pressure was considered highly significant. A frail, small woman suffering from a fracture of the thigh, received 1/10 grain of strychnin every hour for six hours and after an interval of seven hours three more doses at the rate of 1/10 grain per hour, without showing either toxic symptoms or any blood-pressure change. In a case of typical surgical shock induced by fracture of the skull, the initial systolic pressure, which was from 55 to 65 mm., was unaffected by either 1/10 grain of strychnin or 5 grains of caffein sodio-salicylate; but nevertheless the failure of these drugs to show a pressor effect cannot be explained by assuming that the function of the vasomotor center was in abeyance, for stimulation of the peripheral nerves was followed by a prompt and lasting rise in the pressure of 30 mm. The stimulus consisted of the application to the wound of tincture of iodin.

The results obtained from the use of strychnin in this group of patients may be summed up as follows:

1. Eight times out of seventeen there was no change in systolic pressure. Once it fell 10 mm. for two hours. Nine times out of seventeen there was a rise in systolic pressure. This rise was small, usually brief, often of only a few minutes' duration. It was inconstant, never to be relied on — often occurring after the first injection of a series, then falling to the original level in a short time and not recurring after subsequent injections. In no instance was the rise accompanied by improvement in the clinical condition. Only once was there a rise of more than 15 mm. In this single instance the pressure rose 26 mm. for a few minutes. In one patient the examination of the lungs caused a rise of from 20 to 30 mm. which lasted one hour; and in another patient, subcutaneous injection of water caused a greater rise than 1/10 grain of strychnin.
2. Nine times out of thirteen there was no effect on the diastolic pressure. Once it fell 10 mm. for forty minutes, and in another case 15 mm. for one and one-half hours. Once it rose 30 mm. for fifteen minutes.
3. Eleven times out of sixteen the pulse showed no change. In no case was there a slowing which could be honestly attributed to the drug.

CAFFEIN

It is a very common clinical practice to give caffein, for the purpose of stimulating the vasomotor center, to persons suffering from acute infectious diseases. It has, however, been shown by Sollmann and Pilcher[8] that caffein has a very insignificant stimulating effect on the vasomotor center. They summarize their very careful and complete studies thus:

> The circulatory effects of moderate doses of caffein consist in vasodilatation combined with sufficient cardiac stimulation to maintain or even increase blood-pressure. Both of these

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[7] Zabel: Plötzliche Blutdruckschwankungen und ihre Ursachen, München. med. Wchnschr., 1910, lvii, 2278.

[8] Sollmann and Pilcher: The Actions of Caffeine on the Mammalian Circulation, Jour. Pharmacol. and Exper. Therap., 1911-1912, iii, 19.

activities favor blood-flow. The oncometer shows conclusively that the moderate rise of pressure which is observed in anesthetized animals is, in most cases, exclusively cardiac.

The method adopted for studying the effects of caffein was the same as that used for studying the effects of strychnin in the acute infectious and hypotensive cases. Caffein sodio-salicylate was invariably employed.

Data: There were three cases of severe pneumonia, one of general peritonitis, one of fatal tuberculous enteritis, two of traumatic shock and one fatal septicopyemia.

Results: 1. Eight out of nine times there was no effect on the systolic pressure. Once it fell 35 mm. during the period of treatment. There was not a single rise in systolic pressure as a result of administering caffein.

2. Five out of six times there was no effect on the diastolic pressure. Once it fell 10 mm. during the period of treatment.

3. Nine out of ten times there was no effect on the rate of the pulse. Once it rose 10 beats per minute during the period of administration.

4. In no instance was there a measurable change in respiration.

It could not be demonstrated, with the method used, that either strychnin sulphate or caffein sodio-salicylate has any beneficial effect on the cardiovascular disturbances of the infectious diseases.

SUMMARY

1. Since the blood-pressure is not low either in persons showing grave symptoms of pneumonia or in those dying of that disease, and since it has been proved that the vasomotor arcs are normal in animals near death from pneumonia, it is logical to conclude that the vasomotor mechanism is not impaired in pneumonia.

2. Strychnin does not improve or augment the work of the heart in persons suffering from broken cardiac compensation.

3. It could not be shown that either strychnin or caffein stimulated the cardiovascular apparatus in any of the conditions studied.

329 Beacon Street.

ABSTRACT OF DISCUSSION

Dr. Lawrence Litchfield, Pittsburgh: Dr. Newburgh gave the impression that blood-pressure increases in pneumonia and that many patients die therefrom. I think the blood-pressure varies in pneumonia as it does in persons without pneumonia and, therefore, this should be taken into account. So far as my observation goes, most of the pneumonia patients that I lose are either those who have a low blood-pressure or those in whom the pressure falls in spite of treatment. I do not think that pneumonia in the beginning affects the blood-pressure specifically. Pressure varies in pneumonia as it does in health and there are very wide variations in healthy people.

Dr. Bernard Fantus, Chicago: The critical study of the action of drugs on diseased human beings is something that we are very much in need of; and Dr. Newburgh's paper is an excellent example of the kind of work of which we should have a large amount. On the other hand, using drugs in a routine manner does not enable us to formulate any judgment concerning the value or lack of value of that particular form of treatment. As far as my own observations are concerned I must take issue with the statement made by the previous speaker that strychnin is of value in pneumonia. I had occasion to make some observations on the death-rate of pneumonia patients some years ago, in services at the Cook County Hospital in Chicago, in which strychnin was used and in other services in which it was not used, and my impressions were such as would confirm the belief that the patients had a better chance for life in the services in which strychnin was not used in a routine manner.

Dr. L. P. Hamburger, Baltimore: What is the history of the clinical use of strychnin in this country? In Germany it is not viewed at the "life-preserver" which we here deem it!

Dr. C. S. Williamson, Chicago: One important point is that the variations in the systolic blood-pressure alone are by no means a reliable criterion of improvement, or the reverse. Sahli, some years ago, made a study of cases associated with high blood-pressure, and concluded that the blood-pressure was kept up by the cyanosis and venous congestion of the medullary centers, a condition to which he gave the name *Hochdruck-Stauung*—high pressure stasis. Now every clinician of much experience sees these cases occasionally. The blood-pressure is very high, despite outspoken signs of broken compensation, and after the use of some of the digitalis bodies intravenously or otherwise, the systolic pressure drops as much as 20 or 25 mm., with a simultaneous great improvement in the condition. One must therefore bear in mind this group of cases, or othrwise run a great risk of misinterpreting the results. Might not the high pressure in some of Dr. Newburgh's cases be due to medullary stasis, as in the cardiac group just referred to?

Dr. L. H. Newburgh, Boston: It is a fact that we find high blood-pressure in cases of pneumonia. Because a drug does not raise or does not affect the pressure does not permit us to decide whether or not it is a good drug. Caffein probably is a good drug, as has been shown, but its effect is not primarily on the blood-pressure, though it does augment the circulation without increasing the blood-pressure appreciably. Incidentally it has no effect on the pulse. I merely stated that there was no measurable effect.

A COMPARISON OF CHOLESTERINIZED AND NON-CHOLESTERINIZED ARTIFICIAL ANTIGENS IN THE WASSERMANN REACTION *

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Since the introduction of cholesterinized antigen by Sachs[1] from Ehrlich's laboratory, reports concerning its specificity have been conflicting, varying from the assertion that an artificial antigen had been found possessing the requirements of an ideal "standard antigen,"[2] to an assertion that it was unreliable and hence a menace to the clinician.[3]

In view of such diversity of opinion, it appeared desirable to investigate its merits in our own hands before relying on it, and to report the result of that investigation extending over a series of four hundred reactions. In these cases, as accurate knowledge of the clinical condition of the patient was obtained as a mixture of hospital and dispensary practice and referred cases would permit. Inadequacy of clinical records and personal histories have alone been influential in excluding about two hundred more reactions in a straight series of approximately six hundred cases. Study of the clinical data led me to adopt the five divisions of clinical diagnosis with reference to syphilis as follows: (1) positive, (2) probable, (3) for diagnosis (this division [six reactions]. was omitted in a consideration of those cases in which there was a diversity of results with the antigens used), (4) doubtful, and (5) negative.

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* From the Department of Clinical Pathology and Experimental Medicine of the College of Physicians and Surgeons, Baltimore.

[1] Sachs, H.: Berl. klin. Wchnschr., 1911, lxviii, 2066.

[2] McIntosh, J., and Fildes, P.: Syphilis, London, 1911, p. 220; Ztschr. f. Chemotherap., 1912, i, 79.

[3] Thomas, B. A., and Ivy, I. H.: Use of Cholesterinized Antigens in the Wassermann Reaction, The Journal A. M. A., Jan. 31, 1913, p. 363.

Approximately half of the reactions included in this study were performed at the laboratory of Dr. Charles E. Simon and the remainder by myself. The moderate discrepancy of parallelism between these two portions of the series is adequately explained on the ground that, in one instance, tests are made on all the male public patients of the Mercy Hospital by one of us as routine, while at least a suspicion of lues is entertained when specimens are referred to the other.

The comparison in the reactions of this series was confined to the analysis of the same serum or spinal fluid tested in duplicate with two antigens, one, the acetone-insoluble lipoid extract of beef-heart of Noguchi (designated in the accompanying tables as N. A.), and the other, cholesterinized alcoholic extract of beef-heart prepared after the method of Sachs (designated as S. C. A.). Repeated titration of anticomplementary and antigenic power of these two antigens during the course of the series gave a constant titer of one in ten parts of 0.9 per cent. salt solution. They hence exhibited complete parallelism and splendid keeping power.

TABLE 1.—CASES IN WHICH BLOOD-SERUM RESULTS WERE IDENTICAL WITH THE TWO ANTIGENS

Reaction *	Total No. of Cases	Clinically and Historically					Positive Cases Include
		Positive	Probable	For Diagnosis	Doubtful	Negative	
+++	95	73	13	7	2	0	One case of tabes and 3 of general paresis.
++	21	18	0	2	0	1	Two of long-standing lues with active treatment; 1 of general paresis.
+	10	6	1	3	0	0	One of long-standing lues with active treatment; 1 general paresis.
∓	6	1	0	1	0	4	One of long-standing lues with active treatment; 1 general paresis.
±	22	3	2†	5	4	8	Three of long-standing lues with active treatment.
—	115	22	0	24	22	47	Eight of general paresis; 21 of long-standing lues with active treatment, and 1 of cerebrospinal lues.
Total	269	123‡	16	42	28	60	

* In this and the following tables +++ and ++ indicate, respectively, strongly positive and positive; + and ∓ inconclusive, and ± and —, negative.

† One case in the primary stage and one also of congenital lues.

‡ Included in the 32 doubtful and negative reactions were long-standing with active treatment, 26; cerebrospinal lues, 1; general paresis, 10, 9 of which were of long standing with active treatment.

The antigen of Noguchi was selected for the comparison, not only because it was one which we had previously been using, but also because it is considered the most efficient[4] of uncholesterinized artificial luetic antigens.

This series includes 379 serums and 21 spinal fluids. The tests on the latter were usually made in more than one dilution, each dilution being made in duplicate with either antigen. Two hundred and sixty-nine serums, or 71 per cent.,.and 14 spinal fluids, or 66 per cent. of the total number of each, gave reactions which were identical with both antigens (105 serums and 7 spinal fluids (27.7 per cent. and 33 per cent., respectively), gave in varying degree a more marked deviation of complement with standard cholesterinized antigen than with Noguchi antigen. But 5 serums (1.25 per cent.) and no spinal fluids gave more complete fixation of complement with Noguchi antigen than with standard cholesterinized antigen.

CASES IN WHICH RESULTS WERE IDENTICAL

1. As shown in Table 1 there were 116 positive reactions. Of these, 2 were clinically doubtful and 1 clinically negative. These three were all in negroes, and though not showing signs of syphilis, one cannot escape the lingering suspicion that their faulty observation, not to question their veracity, might account for the discrepancy in past history. The remaining 113 positive reactions were not at variance with the clinical findings or histories.

2. There were 16 inconclusive reactions. Of these, 4 were negative, the same number for diagnosis, 1 was probably luetic and 7 were definitely so. Of the last, 2 were general paretics and 2 were active cases, all 4 undergoing vigorous antiluetic treatment, leaving 3 positive cases which were not detected by either antigen.

3. There were 137 negative reactions. Of this number, 25 had positive histories, 24 of which had been under long-continued antiluetic treatment. The remaining case was diagnosed as brain syphilis (Case 1, Table 2 and Case 1, Table 4) the cerebrospinal fluid giving complete complement fixation with both antigens.

In this group there were two cases in which lues was clinically probable. One was tentatively diagnosed as congenital syphilis—parenthetically, congenital lues is the evil genius of the Wassermann reaction—and the other a chancre. In the latter case the appearance of a secondary rash four weeks later substantiated the clinical diagnosis, at which time a second blood Wassermann gave a + + + reaction with both antigens.

Twenty-nine out of a total of 42 cases which were clinically for diagnosis yielded a negative reaction, and 26 out of 28 cases which were clinically doubtful were likewise negative.

4. A separate consideration of the so-called parasyphilitic diseases is of interest. This includes 14 general paretics. All except 4 had had vigorous treatment, including in most cases intraspinal injections of salvarsanized blood-serum. Of the 4 untreated cases, 1 gave a negative and 1 an inconclusive reaction, while 2 were strongly positive. Of the 10 treated cases, 1 persisted with complete complement fixation, the remaining 9 being modified to a greater or less extent by treatment (or otherwise). One case of tabes dorsalis yielded complete complement fixation.

Fourteen spinal fluids were examined in which identical results were obtained with both antigens (Table 2).

Six of these were clinically positive cases and gave complete complement fixation in all dilutions. One was tentatively diagnosed as brain syphilis and gave a + + reaction in the stronger dilutions only. The remaining seven cases were Wassermann-negative even in the strong concentrations. The clinical diagnoses in these cases were as follows: multiple sclerosis, 1 case; sciatica, 1; neurasthenia, 2 (one of which had active lues and a positive blood-serum Wassermann); chorea, 1 (congenital lues was considered but not established); paralysis of third right nerve, 1; for diagnosis, 1 case.

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[4] Kolmer, J. A.; Lanbaugh, E. E.; Casselman, A. J., and Williams, W. W.: Practical Studies on the So-Called Syphilis "Antigens," with Special Reference to Cholesterinized Extracts, Arch. Int. Med., December, 1913, p. 660.

CASES IN WHICH RESULTS WERE NOT IDENTICAL

Most important, of course, are the 110 serums (29 per cent.) and the 7 spinal fluids (33.33 per cent.), in which there was not agreement in the results obtained with the two antigens. For purposes of accuracy in clinical control it seemed advisable to disregard in this connection six additional cases which would, if not omitted, be listed "for diagnosis."

TABLE 2.—CASES IN WHICH CEREBROSPINAL FLUIDS YIELDED RESULTS IDENTICAL WITH THE TWO ANTIGENS

Case No.	Diagnosis	N. A.*							S. C. A.*						
		1-1	1-2	2-5	1-3	1-5	1-8	1-10	1-1	1-2	2-5	1-3	1-5	1-8	1-10
1	Brain syphilis	+++	..	+++	..	..	..	..	+++	..	+++	..	..	..	..
2	General paresis	..	..	+++	..	..	..	..	..	..	+++	..	..	..	..
3	Multiple sclerosis	—	..	—	..	..	..	..	—	..	—	..	..	..	..
4	Tabes	+++	..	+++	..	..	..	..	+++	..	+++	..	..	..	..
5	Brain syphilis	..	..	..	..	+++	..	..	..	..	..	..	+++	..	..
6	Tabes	..	..	..	..	+++	..	..	..	..	..	..	+++	..	..
7	Tabes	..	..	..	..	+++	..	..	..	..	..	..	+++	..	..
8	Brain syphilis ?	..	++	..	++	—	—	—	..	++	..	++	—	—	—
9	For diagnosis	..	..	..	..	±	..	..	..	..	..	..	±	..	..
10	Sciatica	..	±	..	—	—	—	—	..	±	..	—	—	—	—
11	Neurasthenia	..	—	..	—	—	—	—	..	—	..	—	—	—	—
12	Lues; neurasthenia ?	..	—	..	—	—	—	—	..	—	..	—	—	—	—
13	Chorea; congenital lues	..	—	..	—	—	—	—	..	—	..	—	—	—	—
14	Third nerve paralysis	..	..	..	..	—	..	..	..	..	..	..	—	..	..

* The figures heading the columns below (1-1, 1-2, 2-5, etc.) indicate dilutions. Thus 1-1 indicates undiluted spinal fluid; 1-2, 1 part spinal fluid and 1 part 0.9 per cent. saline; 2-5, 2 parts spinal fluid and 5 parts saline; 1-3, 1 part spinal fluid and 3 parts saline; 1-5, 1 part spinal fluid and 5 parts saline; 1-8, 1 part spinal fluid and 8 parts saline; 1-10, 1 part spinal fluid and 10 parts saline, of each of which 0.5 c.c. was used.

We considered these cases with reference to the degree of complement fixation exhibited by the more inhibitive antigen irrespective of the reaction of the weaker one. On this basis the same interpretation applies to the results here obtained as when the reactions were identical, namely, + + and + + + being considered positive, + and ∓ as inconclusive, and ± as negative (obviously with our method of indicating complement fixation there could be no disagreement of results for degrees of inhibition less than ±).

Those cases in which the blood-serums yielded a greater degree of complement fixation with standard cholesterinized antigen than with Noguchi antigen are recorded in Table 3. This division yielded 68 (64.7 per cent.) positive Wassermann reactions, 29 (27.6 per cent.) inconclusive Wassermann reactions and but 8 (7.7 per cent.) negative reactions.

TABLE 3.—CASES IN WHICH BLOOD-SERUM COMPLEMENT FIXATION WAS GREATER WITH CHOLESTERINIZED THAN WITH NOGUCHI ANTIGEN

Reaction		Total No. of Cases	Clinically and Historically				
N. A.	S. C. A.		Probable	Doubtful	Negative	Positive	Positive Cases Include
++	+++	16	2	0	0	14	
+	+++	8	3	0	0	5	One case of general paresis; 1 of long standing with active treatment.
∓	+++	2	0	0	0	2	
±	+++	5	2	1*	0	2	One case of general paresis; 1 gave a +++ N. A. reaction before treatment.
—	+++	19	3	1*	0	15	One gave a +++ N. A. reaction before treatment; 1 gave a + luetin reaction; 2 of long standing with active treatment; 5 general paresis and 1 of tabes.
+	++	5	1	0	1	3	One gave a +++ N. A. reaction before treatment.
∓	++	0	0	0	0	0	
±	++	7	1	1*	0	5	One gave a +++ N. A. reaction before treatment; 3 of long standing with active treatment; 1 persistent —N.A. for one year.
—	++	6	2	0	0	4	One of general paresis; 1 of long standing with active treatment.
∓	+	1	0	0	1	0	
±	+	6	0	0	2	4	Four of long standing with active treatment; 1 of general paresis.
—	+	4	1‡	2	0	1	One of long standing with active treatment.
±	∓	5	0	1	2	2	Two gave a +++ N. A. reaction before treatment.
—	∓	13	0	4*	4	5	Two gave a +++ N. A. reaction before treatment; 5 of long standing with active treatment; 1 with brain syphilis.
—	±	8	0	3	3	2	Two of long standing with active treatment.
		105	15	13	13	64†	

* One case with history of chancroid.

† Totals: a +++ N. A. reaction before treatment, 8; a + luetin reaction, 1; history of "chancroid," 4; long standing with active treatment, 19; congenital lues, 1; persistent — N. A. for one year, 1; general paresis, 8; tabes, 1; brain syphilis, 1.

‡ One case congenital lues.

Of the 68 patients with positive reactions, all save 4 of the persons were or had been definitely infected with syphilis. Of the 4 who denied such infection, 3 admitted a history of chancroid, which is certainly suggestive of the possibility of a specific lesion, thus leaving only 1 case to be explained either on the ground of a non-specific reaction or false history. Which of these alternatives is correct remains an open question.

Of the 29 patients with inconclusive reactions, 9 gave no evidence whatsoever of lues. Seven were doubtful, considered clinically (1 gave a history of chancroid), 1 was a congenital luetic and the remaining 12 were undoubted cases of lues under the influence of vigorous treatment.

Of the 8 cases yielding negative reactions, 3 were clinically negative, 3 were doubtful and in 2 the reactions had changed from positive to negative in the course of vigorous antiluetic therapy.

Those cases in which the cerebrospinal fluids yielded a greater degree of complement fixation with standard cholesterinized antigen than with Noguchi antigen are recorded in Table 4. All of these cases were undoubtedly luetic. Before treatment two of them (Cases 1 and 4) had shown the same degree of inhibition with the two antigens (compare Cases 1 and 4 of Table 2). Two others were before and after treatment in the same persons. These two exhibit one of the most notable features of the entire series, namely, the more resistant nature of standard cholesterinized antigen complement fixation during the course of treatment. After the collection of data for this paper was concluded, it is interesting in this connection to note that a third test in this same case gave negative results in all dilutions with both antigens, indicating that the reaction with standard cholesterinized antigen is amenable to complete change, provided that treatment is sufficiently extensive and intensive.

There remain for consideration only those cases in which Noguchi antigen gave a greater degree of complement fixation than standard cholesterinized antigen. There were but five such cases (1.25 per cent. of the entire series) all occurring in blood-serums (see Table 5). One case probably luetic gave a positive reaction with Noguchi antigen and an inconclusive one with standard cholesterinized antigen. Three of the remaining four cases were definitely non-luetic or doubtfully so. The last case was definitely luetic, but, under vigorous treatment, the reaction was becoming negative.

TABLE 4.—CASES IN WHICH THE CEREBROSPINAL FLUID WAS MORE STRONGLY POSITIVE WITH CHOLESTERINIZED ANTIGEN THAN WITH NOGUCHI ANTIGEN

Case No.	Diagnosis	N. A.							S. C. A.						
		1–1	1–2	2–5	1–3	1–5	1–8	1–10	1–1	1–2	2–5	1–3	1–5	1–8	1–10
1	Brain syphilis	—	..	—	..	..	..	..	+++	..	+++	..	..	..	..
2	Tabes	..	+	..	+	—	—	—	..	+++	..	+++	—	—	—
3	Tabes	..	±	..	±	±	..	±	..	+	..	+	±	±	±
4	Tabes	..	±	..	—	—	—	—	..	+++	..	±	±	±	±
5	Brain syphilis	..	—	..	..	—	..	..	..	—	..	..	+++	..	..
6	Tabes	..	+++	..	+++	+++	±	±	..	+++	..	+++	+++	+++	+++
7	Brain syphilis	..	..	..	..	+	..	..	..	..	..	..	+++	..	..

See explanation under Table 2.

TABLE 5.—CASES IN WHICH BLOOD-SERUM COMPLEMENT FIXATION WAS GREATER WITH NOGUCHI THAN WITH CHOLESTERINIZED ANTIGEN

Reaction		Total No.	Clinically and Historically			
N. A.	S.C.A.		Positive	Probable	Doubtful	Negative
+++	+	1	..	1	..	..
±	—	4	1*	..	1	2
Total	......	5	1	1	1	2

Under active treatment.

SUMMARY

1. In a series of 379 serums and 21 spinal fluids, 269, or 71 per cent., of serums and 14, or 66.66 per cent., of spinal fluids gave identical results with standard cholesterinized antigen and Noguchi antigen.

2. In 110, or 29.05 per cent., of serums and 7, or 33.33 per cent., of spinal fluids, there was to a greater or less extent a lack of agreement between these two antigens. Of the 110 serums showing differences in complement fixation, 105, or 95.4 per cent., showed greater complement fixation with standard cholesterinized antigen than with Noguchi antigen, while 5, or 4.6 per cent., showed greater inhibition of hemolysis with Noguchi antigen than with standard cholesterinized antigen. No spinal fluid exhibited the latter phenomenon.

CONCLUSIONS

1. Standard cholesterinized antigen does not yield an appreciable number of non-specific reactions.

2. Standard cholesterinized antigen detects many luetic cases which do not yield positive results with Noguchi antigen.

3. Standard cholesterinized antigen, though amenable to the influence of treatment, is less susceptible to extinction by therapeutic measures.

4. Standard cholesterinized antigen possesses splendid keeping properties, is always available and is easy of preparation.

5. Standard cholesterinized antigen is an ideal artificial antigen.

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THE ADRENALS AND THE PULSE-RATE

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The adrenal glands seem to be an important factor in integrating the body for unusual muscular activity. Circulating epinephrin causes a depression of the digestive activities, a shifting of the blood from the splanchnic to the somatic structures, increased blood-pressure, dilated bronchioles and mobilization of dextrose. It is an efficient aid in abolishing fatigue.[1]

During muscular exertion acceleration of the pulse occurs. It would seem that the acceleration might be due in part to a discharge of epinephrin, which is a well-known cardiac stimulant. But the general supposition is that in a normal animal the drug causes slowing of the heart, the depression being a reflex effect resulting from high blood-pressure. Such is the common text-book statement of the case. On this ground, Gasser and Meek[2] have recently concluded that epinephrin discharge is not to be considered a factor in the accelerated pulse which accompanies muscular exercise. On the face of the matter this would seem an anomaly. Why should adrenal secretion cause a number of other effects which favor muscular activity but oppose the acceleration of the pulse, which, as a matter of fact, occurs despite any such opposition?

The statement that epinephrin slows the pulse seems to be based on Oliver and Schaefer's[3] and Szymonowicz's[4] original reports on the effects of injecting adrenal extracts. Their observation, that the sudden injection of massive doses slows the pulse, has often been confirmed. But it is to be noted that such experiments fail in two respects to simulate actual adrenal secretion. Normal adrenal discharge cannot be supposed to occur with the rapidity of an ordinary intravenous injection. Moreover, the quantities used in pharmacologic demonstrations are usually far out of proportion to any that the glands themselves can be supposed to secrete. While conclusive data have not been obtained, the available evidence indicates that the potential discharge of epinephrin is comparatively small. Hoskins and McPeek[5] observed that in dogs in which particular care was taken to conserve the available epinephrin, direct massage of the glands produced at most but a slight elevation of blood-pressure — approximately 25 per cent. above the normal.

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[1] For a review of the literature see Cannon: Am. Jour. Physiol., 1914, xxxiii, 357.

[2] Gasser and Meek: Am. Jour. Physiol., 1914, xxxiv, 69.

[3] Oliver and Schaefer: Jour. Physiol., 1895, xviii, 230.

[4] Szymonowicz: Arch. f. d. ges. Physiol., 1896, lxvi, 131.

Osgood[6] compared the effects of stimulating the secretory fibers to the adrenal glands with injecting epinephrin. He found that the quantity discharged was small and that the glands were soon exhausted.

Subcutaneous injections of epinephrin with consequent slow absorption have been observed to cause acceleration of the pulse. Oliver and Schaefer's original paper contains an illustrative protocol of a dog in which, after a large subcutaneous injection of adrenal extract, the pulse gradually increased for an hour and a half from 116 to 150 per minute.[7] Also with the use of epinephrin clinically as a test for *sympathicotonie* an accelerated pulse is often observed.[8]

Normal epinephrin discharge can be closely simulated by injecting the drug slowly into a femoral vein. We have investigated the effects of such injections on the pulse, using medium-sized dogs as the experimental animals. We employed quantities of the drug sufficient to cause all degrees of increased blood-pressure, in various cases from 9 to 77 per cent. The aim was to inject the fluid steadily so as to produce smooth curves, either gradually ascending or ascending and sustained at an increased height. The injections were continued over a period of from a half to two minutes. The doses were from 3 to 8 c.c. of epinephrin (adrenalin, P. D. & Co., 1:50,000 dilution). The dogs were held under ether anesthesia just sufficiently deep to abolish the corneal reflex. The heart-rate was determined by counting the pulse-waves in a femoral arterial pressure record on which a synchronous time record was registered from a Harvard "electric clock." The pulse was counted for ten or fifteen seconds before the injection began and at intervals while the animals were under the full influence of the drug. All the dogs under the influence of ether showed a somewhat high pulse-rate as compared with that of unanesthetized dogs. The results of the experiments are embodied in the accompanying table. In cases in which a single reading gives the essential result of the experiment, one only is given. In other cases in which different results were obtained during different stages of the reaction two readings have been selected to exemplify the results of the whole series of determinations of that particular experiment. In eighteen of the twenty-eight dogs studied acceleration alone resulted from the injection. In five instances decreased pulse-rate only was observed. In four instances the pulse was accelerated when blood-pressure was moderately increased, but slowed when the pressure went higher. In one case the pulse-rate was unchanged, although the blood-pressure was increased from 108 to 154 mm.

These determinations were made either during the period while the injection was continuing or within less than a half minute after it was discontinued. Doses of epinephrin of the size employed are destroyed very quickly. As soon as this destruction is accomplished, or well under way, the pulse begins to be retarded and is often below the initial rate before the original pressure equilibrium is restored. If the dose has been very large and quickly injected this secondary retardation becomes pronounced. It is probable that an undue attention to this effect has given rise to the general opinion that retardation is the characteristic effect of epinephrin injections.

THE INFLUENCE OF EPINEPHRIN ON PULSE FREQUENCY AND BLOOD-PRESSURE IN TWENTY-EIGHT DOGS

	Pulse		Blood-Pressure	
Animal No.	Before Epinephrin*	After Epinephrin*	Before Epinephrin†	After Epinephrin†
1	234	228	132	152
	234	192	132	162
2	174	198	108	154
	174	210	108	192
3	150	162	92	116
	150	204	92	124
4	200	168	108	134
5	204	252	82	114
6	188	180	98	140
	188	164	98	170
7	162	198	96	128
8	180	228	96	104
9	162	144	62	108
	156	162	68	82
10	204	224	114	154
	204	224	114	186
11	180	196	108	154
12	210	234	116	132
	198	234	114	140
13	160	152	98	112
	148	152	88	108
14	216	220	116	136
	216	208	116	162
15	156	204	94	130
16	258	258	108	154
17	240	246	114	140
18	186	210	82	112
19	210	240	100	140
20	156	138	112	150
21	174	210	108	190
22	162	252	82	160
23	184	228	110	120
24	234	282	92	176
	144	216	110	144
25	192	228	114	176
26	184	216	76	130
27	210	192	112	154
28	188	204	94	130
	188	164	94	142

Decreased pulse frequency, 11.
Increased pulse frequency, 28.
No effect, 1.
*Beats per minute.
†Mm. of mercury.

Even though a slowing of the pulse had been found, the anomaly previously referred to would be *seeming* rather than real. Under ordinary natural conditions any occurrence which causes accelerated pulse causes at the same time augmented blood-pressure. It is a fundamental law, however, that increased pressure in itself tends always to retard the pulse. In any case, therefore, in which acceleration of the pulse and augmentation of blood-pressure occur together, there has been a stimulation of the heart sufficient more than to compensate for the operation of this law. The accelerated pulse is probably due to the cumulative effect of several kinds of stimuli to the heart, as nerve impulses, venosity of the blood and circulating epinephrin. It would by no means follow, therefore, that even if epinephrin *alone* did slow the pulse, adrenal discharge is not a factor in the accelerated pulse which accompanies muscular activity. The accelerator influence is acting in any case.

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[5] Hoskins, R. G., and McPeek, Clayton: The Effects of Adrenal Massage on Blood-Pressure, The Journal A. M. A., June 7, 1913, p. 1777.

[6] Osgood: Cited by Cannon: (Footnote 1.)

[7] Oliver and Schaefer: Jour. Physiol., 1895, xviii, 236.

[8] Sardeman, G.: Ztschr. f. exper. Pathol. u: Therap., 1913, xii, 504.

SUMMARY AND CONCLUSION

Intravenous injections of epinephrin under conditions closely simulating adrenal discharge cause not only increased blood-pressure, but, generally, also accelerated pulse. Acceleration of the pulse, therefore, is one of the adaptive functions of the adrenal glands.

2431 South Dearborn Street.

THE TIME THAT THE BREATH CAN BE HELD AS AN INDEX FOR ACIDOSIS

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The importance of acidosis in connection not only with diabetes but also with renal, cardiac and other diseases is being increasingly recognized. For practical clinical purposes it is essential, however, not merely to recognize the condition but also to be able to measure its intensity and to follow its variations—both those spontaneously occurring and those therapeutically induced. For this purpose, determination of the carbon dioxid content of the pulmonary air is rapidly coming to be recognized as the most accurate available method. In principle such a determination may be roughly said to assume that the sensitiveness of the respiratory center is normal and constant, and that the blood stimulus to it is composed of two factors, namely, carbonic acid (CO_2), and other acids (or deficiency of alkali). Whenever the former is found to be automatically decreased below normal, the latter is thereby indicated as above normal; in other words, there is a condition of acidosis.

Unfortunately the determination of the alveolar carbon dioxid is a procedure which, although not difficult for one who has acquired its technic, is quite different from most of the operations to which clinicians are accustomed. Its difficulty varies inversely with the amount of intelligent assistance which the patient can give. For these reasons there appears to be a need for some method of attaining a similar quantitative indication of the degree of acidosis which, even if somewhat less accurate, would be universally and more readily employable.[1]

I believe that such an index of the degree of acidosis is afforded by the length of time that the breath can be held voluntarily. The point of view now coming to be accepted regarding the relation of acidosis to the rate of pulmonary ventilation and the alveolar carbon dioxid is based to a considerable extent on data accumulated by the Pike's Peak expedition.[2] During our stay at the summit and after our descent we had frequent occasion to note that the length of time the breath could be held was shorter as the alveolar carbon dioxid was lower—that is, according to the intensity of the acidosis which causes the increased respiration of great altitudes. The relation was not, however, a direct proportion. While the alveolar carbon dioxid was reduced about one-third, most of the members of the party could hold their breath for less than half as long as at sea-level.

At that time the bearing of such observations on acidosis was not so clear as it is now becoming. We now recognize that one and the same underlying condition in the blood determines the resting alveolar carbon dioxid, the degree of dyspnea on slight exertion, and the duration of voluntary apnea. Lewis, Ryffel, Wolf, Cotton and Barcroft[3] have recently shown that the dyspnea of nephritis is due to an acidosis essentially like that developed in normal persons at great altitudes. Kennaway, Pembrey and Poulton[4] have found that by following the alveolar carbon dioxid in diabetics a warning drop in its tension indicates the approach of coma as long as forty-eight hours beforehand and earlier than any other method. Recent developments indicate that there are a number of distinct forms of acidosis.[5] It is quite possible that the effects on the alveolar air and voluntary apnea of the different forms of this, as yet little understood, condition may show specific variations; but if this proves to be the case, such differences would be of diagnostic advantage rather than otherwise. It will suffice for this preliminary notice to say that a few observations made for me by some of my clinical colleagues have shown that inability to hold the breath at all is an accompaniment of some at least of the forms of acidosis when approaching an acute stage.

While arrangements for a thorough investigation of this topic were under way, there appeared an abstract of a paper by V. A. Stange[6] in which voluntary apnea is recommended as a test of a patient's fitness to undergo general anesthesia. Stange regards the ability to hold the breath as depending on, and an indication of, the condition of the heart-muscle. He states (correctly) that the normal period is between thirty and forty seconds. He considers any period under twenty seconds as contra-indicating general anesthesia. While he appears to have no suspicion as to what it is, as we believe, which the test really depends on and indicates, namely, acidosis, he nevertheless reports observations on a number of chronic diseases in which he finds the duration of voluntary apnea to be abbreviated in about the degree in which acidosis is known from the results of other observers to occur.

At my suggestion a full investigation of this topic has been undertaken by Miss M. P. FitzGerald, who has an extensive experience in this field of work and who made important contributions in connection with the Pike's Peak expedition. The test used consists in directing the patient to sit quiet for at least five minutes; then to draw a full but not abnormally deep inspiration; and to hold it with the mouth closed and the nostrils compressed with the fingers, while the observer notes the time.

The practical utility of this test appears so considerable that it seems advisable to publish it even in its present incompletely studied condition. This is done in the hope also that some of those who may use it will favor us with a report of their observations to supplement and control our own.

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[1] Compare Boothby, W. M., and Peabody, F. W.: A Comparison of Methods of Obtaining Alveolar Air, Arch. Int. Med., March, 1914, p. 497.

[2] Douglas, Haldane, Henderson and Schneider: Phil. Tr. Roy. Soc., 1913, Series B, cciii, 185. FitzGerald, M. P.: Ibid., p. 351.

[3] Lewis, Ryffel, Wolf, Cotton and Barcroft: Heart, 1913, v, 45.

[4] Kennaway, Pembrey and Poulton: Jour. Physiol., 1914, xlvii; Proc. Physiol. Soc., p. 10.

[5] Compare A. W. Sellards: Bull. Johns Hopkins Hosp., 1914, xxv, 101, 141.

[6] Stange, V. A.: Russk. Vrach, 1914, xiii, 72; abstr., The Journal A. M. A., April 4, 1914, p. 1132.

VARIABILITY IN THE RESULTS OF INTELLIGENCE-TESTS

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Although measures for the detection of mental deficiency, and the estimation of its degree when present, are being rather widely discussed at the present time, there is one very important factor which has seldom been emphasized, but which must be taken into consideration in forming conclusions based on the use of intelligence-tests. I refer to the possibility of wide variations in the results of such tests when applied to the same individual by different examiners, if the examiners do not take into account certain features which I shall state later.

In this paper I shall deal only with the Binet-Simon test-scale, as adapted by the late Dr. E. B. Huey for use in the Johns Hopkins Dispensary; but as this scale is the basis of all the commoner forms of intelligence-tests, it would seem that the possibilities for error which must be guarded against in its employment, must likewise be considered in connection with the other varieties.

As part of a general examination, and as a means of gaging *approximately* the extent of mental development in any given case, the Binet-Simon tests are of unquestionable value. Unfortunately, though, there is a wide-spread tendency among both physicians and educators to regard these tests as yielding estimates of the mental age of patients just as accurate from the scientific point of view as are the results of quantitative chemical analyses, and to disregard factors which, if given due weight, might alter materially their deductions.

Experience has shown that the Binet-Simon tests cannot be considered to be exact in the sense that chemical tests are exact; and it is more than doubtful if intelligence-tests can ever be made so. Many things, of which I shall mention those that seem to me the most important, have to be taken into consideration in the application of an intelligence-test scale. The possibility of fatigue on the part of the subject, and to a lesser degree, of the examiner, is one of these. The slowing-up of mental processes during exhaustion is a recognized fact, yet I have seen a physician put a thoroughly tired-out child through the tedious ordeal of a Binet test. The subject's home surroundings and the training he has received are others; for, though the scale is intended to be a measure of native intelligence and not of education, environmental conditions play a large part in an individual's ability to answer correctly certain of the tests, especially for the later ages. Again, and perhaps most important of all, the personal equation as regards both subject and examiner must be considered if these tests are to be properly used. For example, a timid or sulky child and an examiner with a brusque harsh manner, make a bad combination. Under such circumstances, the subject is apt to grow worried or bewildered, and to fail on questions which, under other conditions, he would pass without difficulty. This is of course especially true of those tests done on a time basis. On the other hand, a too sympathetic or inexperienced examiner will often unwittingly suggest the proper responses to tests of which the subject has not the slightest real comprehension. Finally, a patient's general health may have considerable effect on his grading in an intelligence-test. It is surprising how often an apparently low-grade subject is found to be suffering from defective vision or hearing, or some other pathologic condition, the relief of which is followed by marked improvement in his mental status.

These factors are too frequently completely ignored, with the result that diagnoses of mental deficiency are made when no deficiency exists, and conversely, that parents are sometimes told that there is nothing the matter with a child who is in reality handicapped by an incurable constitutional defect. It is this point of variability in the results of the tests that I wish to illustrate by means of the appended table.

All the cases quoted are white males, pupils in the special class for defectives in one of the public schools of this city. In each instance, the first examination was made in the Johns Hopkins Dispensary; and on the result of this first test was based the recommendation which was the means of obtaining the child's admission to the special class. The second and third examinations were conducted at varying times after entry into the special class, the training given in which is largely manual in character. The physical age is that reported by the person accompanying the child at the time of the first examination. In the grading, a plus-mark indicates that the subject received sufficient credits to pass at the mental age given, and any number of additional credits not exceeding four. Thus, "mentality 6 +" shows that the subject responded correctly to enough tests to enable him to grade up to six years, plus one or more additional tests, up to and including four. The examiners were, with three exceptions, physicians, the exceptions being postgraduate students in psychology at Johns Hopkins University. In only a single case was the same individual tested more than once by any one examiner. This was Case 6, in which instance the first and third examinations were both conducted by me.

VARIATIONS IN THE RESULTS OF INTELLIGENCE-TESTS, CONDUCTED BY DIFFERENT EXAMINERS UNDER DIFFERENT CONDITIONS

Case	Age, Years	First Examination Date	Mentality	Second Examination Date	Mentality	Third Examination Date	Mentality
1. J. M. ...	15	12/10/12	7+	1/23/13	7+	12/ 3/13	8+
2. L. K. ...	11½	1/ 3/13	7	1/15/13	5+	10/27/13	7
3. D. F. ...	12	1/15/13	9+	12/10/13	10	2/28/14	8
4. J. W. ...	10½	1/21/13	7+	12/ 3/13	9	4/20/14	10
5. E. D. ...	9	9/15/13	5+	12/10/13	5+	4/ 4/14	4
6. R. H. ...	13	9/29/13	10+	12/10/13	12+	4/ 4/14	10+
7. L. P. ...	9	11/ 1/13	5	12/10/13	6+	4/ 4/14	5
8. A. D. ...	14	12/15/13	10+	2/18/14	10+	4/18/14	9+
9. H. T. ...	12	12/31/13	7	2/18/14	7+	5/ 9/14	6+

While the cases cited are too few in number to afford a basis for any general conclusions, it is nevertheless impossible to deny the significance of the results obtained. These show, as will be noted, variations of from one to three years in the estimated mentality of the individual subjects, the average being between one and two years. The final test, as compared with the first, shows apparent progress in two cases and apparent regression in four; while in three cases the first and last results coincide. In no case did all three tests agree. If each successive examination showed progressively higher mentality, the objection might be made that all the cases in the table happened to be subjects who had not reached their limit of development when first tested, and that the special-class training had improved their condition. The fact that the majority show apparent regression or remained stationary contradicts this, and the only conclusion possible is that the differences in the results were caused by the variability of the tests themselves.

If intelligence-tests, when conducted by examiners with a knowledge of psychology and psychiatry, show such great divergence in their results, the assumption seems justified that the variation would be even more marked in inexperienced hands. It would also seem that it is time to stop regarding such tests as an infallible method of determining a patient's degree of mentality, independently of other considerations.

935 St. Paul Street.

THE USE OF A NO-SOUND STROKE IN PERCUSSING OUT THE BOUNDARIES OF SUPERFICIAL DULNESS OF AIRLESS BODIES

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In the recent editions of the more important books on physical diagnosis one sees at a glance that the strong percussion stroke is being gradually displaced by lighter percussion as a more accurate method of determining the deep dulness of air-free bodies.

Goldscheider[1] has been particularly active in this field of work. He uses the lightest percussion (*Schwellenwertsperkussion*, "threshold of audibility") in ascertaining the deep heart-boundaries, liver edge, upper boundaries of lung and small areas of pulmonary infiltration.[2] The ordinary method of finger-finger percussion is employed except that the pleximeter finger is held in the position of Plesch[3] or, preferably, his own method of *Griffelperkussion*,[4] which consists in the use of a small glass rod as the pleximeter. The upper end is slightly curved, or covered with rubber, and is lightly percussed with the right middle finger; the lower end is placed in the intercostal spaces parallel to the margin of the borders to be delimited. He advises that the rod be held obliquely in order to give the *Schallstrahl eine gewisse Richtung*[4] — orthopercussion. He controlled the method by orthodiagraphic findings[1] and by experiments on the cadaver, claiming for it many advantages.[4]

Sahli vigorously opposes the method because "it does not depend on any generally applicable acoustic principle, and because it disregards the didactically important distinction between deep and superficial dulness."[5] He says that "to appreciate superficial boundaries it is a good general rule that we should percuss as lightly as possible, and a good criterion of the desired strength is to evoke practically no note over the dulled areas."[6]

On the other hand, Orlowski,[7] among others, has gained satisfactory results by adopting Goldscheider's method of orthopercussion, particularly in mapping out the lower border of the liver. He modifies Goldscheider's method somewhat by using the right index finger as plexor and the left index-finger as pleximeter; but the latter is held in the position of Plesch.

Where fecal masses or gaseous distention of the large intestine interfere with accurate work a saline or enema is given. He claims correct findings in 86 per cent. of livers with soft edge and in 92 per cent. of those with hard edge.

Sahli[5] tells us that "by light percussion the lower liver boundary is generally easy to determine." Cabot[8] laconically remarks that "percussion of the lower edge of the liver is notoriously unreliable." Butler,[9] who strongly upholds Goldscheider's method, admits that "it may be difficult to find the lower limit of the liver in the median line in front because of the thinness of the left lobe of the liver and the dulling effect of the muscular layers of the recti."

Owing to the inconstant results obtained by my students and myself in percussing out the areas of superficial heart and liver dulness, it seemed clear to me that the fault lay in the varying strength of the stroke, and that uniform results could be obtained only when each individual examiner percussed with a blow of equal force. To attain this end I devised some eight or ten years ago the following method, which I have since employed:

To determine the outline of the area of superficial cardiac dulness the patient is placed in the usual dorsal decubitus, and is directed to suspend respiration. The examiner's ear is held close to the patient's body. There should be absolute quiet in the room. A point is selected where the heart is known to be uncovered by lung. The pleximeter finger (left middle) is laid gently on this area, the other fingers remaining elevated. The second phalanx is now percussed with the right middle finger. A sound is at first produced by moderately strong percussion which is quickly graded down, by lessening the force of the blow to a *no-sound* or control stroke. This control stroke, which proves inaudible over that portion of the heart's surface uncovered by lung (area of superficial dulness), produces a faint sound over the area of the deep cardiac dulness, and a more decided one over the lung region just outside of it. The no-sound stroke having been obtained, one percusses with a blow of equal force from the area of deep dulness toward the area of superficial dulness. The borders of the latter are instantly recognized by the sudden disappearance of the faint sound obtained over the former. The outstretched pleximeter finger, resting gently in its entire length on the part percussed and parallel to the border to be determined, edges its way quickly in short lateral (pendulum-like) swings toward the objective border, and receives at the end of each swing two short control taps quickly delivered. The other fingers, as stated, are held up from the body surface, allowing the pleximeter finger free action. This maneuver serves as an excellent means for comparing delicate shading in sound, and also in detecting its abrupt disappearance.

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[1] Goldscheider: Ueber Herzperkussion, Deutsch. med. Wchnschr., 1905, xxxi, 333 and 382.

[2] Goldscheider: Ueber abgestufte Lungenperkussion, Verhandl. d. Kong. f. inn. Med., 1907, xxvi, 284.

[3] Plesch uses the right middle finger as plexor, and delivers the blow just above the flexed second phalangeal joint of the left middle finger, the first and second phalanges of which remain rigid and are held vertically, the finger-tip only coming in contact with the patient's body. Ueber ein Verbessertes Verfahren der Perkussion, München. med. Wchnschr., 1902, xlix, 620; Einiges über Perkussion, Deutsch. Arch. f. klin. Med., 1908, xciii, 201.

[4] Goldscheider: Zur Schwellenwertsperkussion des Herzens, Deutsch. med. Wchnschr., 1907, xxxiii, 1121.

[5] Sahli, Hermann: Diagnostic Methods, Philadelphia, Saunders & Co., 1911, p. 216.

[6] Sahli: ibid., p. 210.

[7] Orlowski: Contribution à l'exploration du foie: Au moyen de la percussion, Presse méd., 1912, xx, 643.

[8] Cabot, R. H.: Physical Diagnosis, New York, Wood & Co., 1913, p. 363.

[9] Butler: Diagnostics of Int. Med., New York, Appleton, 1913, p. 501.

The identical technic is used in ascertaining the superficial limits of the liver. The examiner obtains the control (no-sound) stroke at a given point over the exposed surface. He then readily delimits the superficial boundaries by noting the sudden disappearance of the faint sound, as he percusses in a line toward the dulled area, manipulating the pleximeter finger as described.

In persons with very flaccid abdominal walls and in those with marked diastasis recti abdominis, the accuracy of the method for percussing out the lower limit of the liver may be readily proved by the prompt disappearance of the faint percussion sound at a point where the liver edge is just palpable.

After a little practice in the use of the method one almost unconsciously uses a stroke of no greater force in outlining the obtainable deep borders of cardiac and hepatic dulness, only, stronger pressure on the part of the pleximeter finger is added to pick up the relative resistance which is experienced at the instant of slight diminution in the resonance.

The no-sound control percussion stroke is also applicable in mapping out the contour of thoracic aneurysm, dulled lung-areas, abdominal tumors and the like.

2701 Calvert Street.

INTESTINAL MYIASIS

WITH REPORT OF CASE

H. C. BLANKMEYER, M.D.
SPRINGFIELD, ILL.

In 1907 I reported[1] a case of infection with *Anthomyia canicularis* as the eighteenth on record at that time, five having been reported in America, five in Germany and the remainder scattered throughout France, England, Sweden and Argentina. At that time it was stated the *Anthomyia* was the larva of the very small black house-fly so often seen on windows. This classification of the parent was rather indefinite and confusing. It is now positively known that the *Anthomyia canicularis* is the larva of the small black flower-fly known, according to Stitt, as *Anthomyia pluvialis.*

The passing of dipterous larvae in the stool is uncommon and in most cases causes no grave symptoms as the result of their invasion of the intestinal tract. Cachagne, however, reports four deaths following intestinal ulceration accompanied by dysentery. Finlayson of Glasgow has reported an interesting case in a physician who after protracted constipation and pain in the back and sides passed large numbers of the larvae of the *Anthomyia.*

F. C. Wellman records a case of intestinal myiasis with dysenteric symptoms due to the larvae of *Anthomyidae* and *Sarcophaga.* From eighteen to twenty-one larvae were passed after doses of castor oil. The larvae hatched into flies in about a fortnight. The flies, which are often found parasitic in man, lay eggs on decaying vegetables and are suspected of infecting the person during defecation by depositing eggs in and around the anus, which later are thus incubated. This, however, is a recent theory; the eggs are usually ingested. The larvae vary in size from ⅛ to ¼ inch in length, and can be readily seen with the naked eye. The body proper is divided into segments, from ten to fourteen in number, according to age, with lateral branchii or gills. They are beset bilaterally with feathered bristles, two to each segment. The larvae are light brown in color, and when passed in the stools are more or less active. They invade the intestine and produce disagreeable symptoms until vomited up or passed with the feces. The life of the larvae in the human intestine is about two weeks. They are ingested as eggs and hatched out in the small intestine and are highly resistant to all forms of treatment. At the time the first case was referred to me I was convinced that I would never see a similar case again.

Case 2.—Mrs. E. W., aged 32, widow, native of Illinois, referred by Dr. D. W. Deal of this city, has lived on a farm the greater portion of her life. Personal history is negative. The present illness began fourteen years ago with nausea and vomiting. There was irregular menstruation. At this time the patient received more or less extensive treatment for uterine trouble. She was given ferrous sulphate and states that she was treated for every known disease. After several months' illness she began passing larvae and was compelled to resort to enemas. She was married and at once became pregnant, had constant nausea and finally aborted at the third month. She had several uterine hemorrhages and was curetted with poor results. She became very nervous and slept poorly, had no appetite and was unable to retain anything but egg lemonade. Three years ago, after separating from her husband, she noticed frequent shooting pains in the rectal region and at times abdominal tenderness was marked. There was much mucus in the stools and she experienced the sensation of the larvae crawling in the intestine. Occipital headaches are marked, with remissions. Two years ago constipation became chronic and is so to-day. There is burning urination at intervals. At present the menses are regular and not painful. There is almost constant abdominal distention at this time. The pulse is soft and compressible, not rapid, pupils contracted, and respirations normal. She is an adept at taking her own temperature and states that it varies from 95.6 to 101. The appetite is variable; there is a bad taste in the mouth, and the tongue is furred and ridged and red at the edges. Her complexion is sallow and she is generally nervous. She is able to be up and around the house and do light work and reading.

Treatment consists in 1-dram doses of magnesium sulphate before breakfast and at 4 p. m. with 5-grain doses of salol four times a day. The customary parasiticides have been tried with no marked benefit.

She passes from four to fifty larvae per day now and is showing some signs of improvement. The nausea has disappeared, her nervousness is less evident and there is a slight gain in weight. The prognosis would seem to be favorable.

Pocket Flash-Lamp for Transillumination.—The electric pocket flash-lamp makes an excellent light for transillumination of tumors of the scrotum. One of large size is to be preferred, with deep-set lens which may be so pressed against the tumor that light will not escape at its border. If, however, extreme convexity of the lens permits this, or a small tumor, the lens may be unscrewed and removed. The bulb, left deep in the shaft, furnishes a satisfactory substitute for lamps of similar construction that require connection with the electric current. For country doctors or those in small towns without adequate facilities for the operation of other apparatus, this is a practical and convenient method of applying a simple, but valuable diagnostic procedure.—A. L. Glaze, Jr., M.D., Athens, Ala.

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[1] Blankmeyer, H. C.: Infection with Fly Larvae, Anthomyia Canalicularis, The Journal A. M. A., May 4, 1907, p. 1505.

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SATURDAY, JULY 25, 1914

NEWER VIEWS OF THE FUNCTIONS OF THE ADRENALS

When an extract of the medulla of the suprarenal bodies is introduced directly into the circulation a series of profound physiologic reactions may be observed. The most important of these changes are: a cessation of the activities of the alimentary canal; a notable shifting of the circulation from the great vessels of the abdomen to the lungs, heart, limbs and central nervous system, frequently manifesting itself further in a rise in peripheral arterial pressure; an increased cardiac vigor; an augmentation of the sugar-content of the blood. These are the prompt results of what may be termed the "heroic" mode of experimentation—the administration of considerable doses of the active agent of the adrenals.

The question has often been raised whether or not comparable phenomena take place in the ordinary physiologic performances of the body; whether or not epinephrin is continually being secreted in small amounts to maintain the normal tonus of the blood-vessels and to keep the content of the blood-sugar up to its normal level. We have previously reviewed the current ideas on these topics and suggested the improbability of the vasomotor and perhaps the entire sympathetic apparatus being kept in tonic activity by a persistent minimal suprarenal discharge.[1] W. B. Cannon of the Harvard Medical School has offered a novel and ingenious interpretation of the service which the adrenals may render to the organism — an emergency function, as he terms it.[2] To understand it one must recall that the bodily alterations noted above—the changes in the circulation, hyperglycemia, etc.—are also caused by nervous discharges along sympathetic pathways; discharges such as are sent forth in crises of pain and great emotion. Furthermore, the adrenal medulla is subject to central nervous influences coming to it by way of the splanchnics, the artificial stimulation of which will induce a secretory activity with a resultant increase of epinephrin in the blood. The next step was to prove that the adrenal glands can actually be made to discharge their products promptly into the circulation when they are affected by vigorous nervous impulses coming to them normally by way of the pathways indicated.

If it prove true that insignificantly minute quantities of suprarenal secretory products enter the circulation in the usual routine of the bodily functions, of what value to the organism are the extraordinary discharges of epinephrin called forth by the major emotions? As Cannon says, the cessation of activities of the alimentary canal (thus freeing energy for other parts); the shifting of the blood from the less insistent abdominal viscera to the organs immediately essential to life itself, such as the lungs, the heart, the central nervous system and, at critical moments, the skeletal muscles as well; the increased cardiac vigor; the quick abolition of the effects of muscular fatigue, the mobilizing of energy-giving sugar in the circulation—these are the changes which occur when fear or rage or pain causes the adrenal glands to pour forth an excessive secretion.

Muscles work preferably by utilizing the available carbohydrate of the organism. Great muscular activity considerably reduces the quantity of stored glycogen and of circulating sugar. The outpouring of sugar which is attendant on the major emotions and physical pain and which leads to hyperglycemia may be interpreted as a biologic adaptation to the necessities of struggle, fighting or flight. The epinephrin, which we now know is set free by pain and by fear and rage, would put the muscles of the body unqualifiedly under the control of the nervous system; for precisely as removal of the adrenals has a well-known debilitating effect on the muscular system, injections of their secretory products act as an invigorator. Epinephrin prepares fatigued muscles for better response to nervous impulses sent forth in great excitement.[3] This provision, together with the abundance of energy-supplying sugar newly flushed into the blood as the consequence of the epinephrin present, would give to an individual in which these mechanisms are most efficient the best possible conditions for putting forth supreme muscular efforts. Cannon even believes that if these results of emotion and pain are not "worked off" by action, it is conceivable that the excessive epinephrin and sugar in the blood may have pathologic effects.[4]

More recently Cannon and Mendenhall[5] have noted that emotional excitement occasions very rapid clotting of the blood. This may properly be associated with a discharge of epinephrin, which also has been shown[6] to hasten clotting and is known to be liberated by pain and strong emotion. This phenomenon of the blood may also be regarded as an adaptive process, useful to the organism. Prompt clot-formation tends to conserve the blood by sealing opened vessels in the injury which may accompany pain or may follow the struggle that fear or rage may occasion.

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[1] The Suprarenals and Vasomotor Tonus, editorial, THE JOURNAL A. M. A., March 7, 1914, p. 778; also Hoskins, R. G., and Wheelon, H.: Adrenal Deficiency and the Sympathetic Nervous System, Am. Jour. Physiol., 1914, xxxiv, 172.

[2] Cannon, W. B.: The Emergency Function of the Adrenal Medulla in Pain and the Major Emotions, Am. Jour. Physiol., 1914, xxxiii, 356.

[3] Gruber, C. M.: The Fatigue Threshold as Affected by Adrenalin and by Increased Arterial Pressure, Am. Jour. Physiol., 1914, xxxiii, 335.

[4] Cannon, W. B., and D. de la Paz: The Stimulation of Adrenal Secretion by Emotional Excitement, THE JOURNAL A. M. A., 1911, lvi, 742.

[5] Cannon, W. B., and Mendenhall, W. L.: Factors Affecting the Coagulation Time of the Blood, IV. The Hastening of Coagulation in Pain or Emotional Excitement, Am. Jour. Physiol., 1914, xxxiv, 251.

Such considerations help to round out Cannon's hypothesis of the emergency function of the adrenals, especially when taken in connection with the fact that the absolutely essential organs — the heart, lungs and brain, as well as the skeletal muscles — in times of excitement or critical moments when the adrenal glands discharge, are abundantly supplied with blood from organs of less importance. As Cannon concludes, each of these changes in the body is directly serviceable in rendering the organism more efficient in the struggle which fear or rage or pain may involve; for fear and rage are organic preparations for action, and pain is the most powerful known stimulus to supreme exertion. The organism which with the aid of increased adrenal secretion can best muster its energies, can best call forth sugar to supply the laboring muscles, can best lessen fatigue, and can best send blood to the parts essential for the run or the fight for life, is most likely to survive. Such, according to the view here propounded, is the function of the adrenal medulla in times of great emergency.

SODIUM FLUORID—A POISON

Although from the point of view of superficial chemical classification the compounds of fluorin belong in the group of halogen salts with chlorids, iodids and bromids, they present many points of difference from the latter. This is particularly true with respect to the behavior of fluorids in the animal organism. They have long been regarded as decidedly toxic substances and have found no recognized acceptance in pharmacotherapy. This failure of fluorids to be used in medical practice need not be attributed solely to their admittedly poisonous nature; for all too often harmful as well as inert substances have been accepted as therapeutic agents for reasons which even historical research cannot discover.

The fluorid of sodium, which alone has any prominent significance in commerce, has considerable antiseptic power, putrefaction being delayed by the addition of one part to five hundred of fluid, while one part in two hundred completely arrests the growth of bacteria. For this reason sodium fluorid was at one time suggested as a surgical antiseptic. One catalog of pharmaceutical preparations actually mentions it as used internally in "epilepsy, malaria, ague, tuberculosis and skin diseases," and externally as an antiseptic dressing for wounds and injuries, remarking further that it does not attack nickel-plated instruments. The internal dose is given by this publication as from $^1/_{12}$ to $^1/_6$ grain (from 0.005 to 0.01 gm.) in solution with sodium bicarbonate; as an application for wounds a solution is suggested of from 0.5: 1,000 to 10: 1,000, and a solution of from 0.5 to 1 per cent. for mouthwashes or for injections in vaginitis. Sodium fluorid, being antiseptic, is said to be used in alcohol distilleries to prevent the formation of injurious quantities of lactic and butyric acids during fermentation of the mash, and also for purifying vats used in fermentation and for disinfecting apparatus employed in distilleries.

If one turns to the actual descriptions of the behavior of sodium fluorid in the animal body and its tissues, the reports do not encourage its use. Even dilute solutions when brought into contact with the mucous membranes produce irritations. In the eye they may cause congestion and inflammation of the conjunctiva and defects in the cornea. In the gastro-intestinal tract symptoms of pronounced irritation appear. Solutions of the fluorids are absorbed with great difficulty by the intestinal epithelium. After subcutaneous injections, suppuration and necrosis may occur.

These acute results from the use of sodium fluorid are, to say the least, admonitory against it. Inasmuch as in appropriate dosage it is a poison which acts simultaneously in the most diverse parts of the organism, any theory as to its action must be based on some general or broadly applicable principle. The most probable one at present involves the property of fluorids, like oxalates, to precipitate calcium as the insoluble salt calcium fluorid wherever the reaction can take place in the body. The blood or tissues may thus be deprived of lime in regions in which it is physiologically needed.

The immediate occasion for taking up anew any consideration of the toxicology of fluorids lies in reiterated reports that they are being used, as they doubtless were a few years prior to the agitation against food preservatives, as admixtures in articles of diet. A commercial motive is readily found in the excellent antiseptic properties of sodium fluorid. For this reason, renewed studies of the effects of repeated administration of this chemical are welcomed. Schwyzer[1] has found in animals that the continued intake of small doses of sodium fluorid, in amounts of from 1 to 2 mg. per kilogram of body-weight, brings about detectable symptoms: increased coagulability of the blood, tendency toward venous thrombosis and indications of irritation of the bone-marrow. The chemical result is a loss of chlorin and of calcium from the bones. The elimination of chlorin is attributable to the unlike "affinities" of chlorin and fluorin. The chlorin is excreted through the kidneys, the calcium in both urine and feces. The body may become deficient in chlorin in this way. There is, furthermore, frequently a decided disappearance of fat from the bone-marrow owing to the invasion by lymphoid elements.

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[6] Cannon, W. B., and Gray, H.: Factors Affecting the Coagulation Time of the Blood, II. The Hastening or Retarding of Coagulation by Adrenalin Injections, Am. Jour. Physiol., 1914, xxxiv, 232.

[1] Schwyzer, F.: Einfluss chronischer Fluorzufuhr auf den Chlor- und Calciumstoffwechsel, Biochem. Ztschr., 1914, lx, 32.

Such experimental observations speak for themselves; at best they should force the users of fluorids, if there still be such, to furnish rigorous proof of the harmlessness of the preservative. Meanwhile we shall repeat verbatim the conclusions of Schwyzer: Fluorin preparations, administered steadily even in the small dosage of 1 mg. and less per kilogram of body-weight per day, are poisonous. They should be completely excluded from the nutrition of man and that of domestic cattle.

PATHOLOGIC ASPECTS OF VAGRANCY

The acting superintendent of the New York Municipal Lodging-House has made a study of about two thousand vagrants. The results of his examination, which he has embodied in a report to the Commissioner of Public Charities, are of special interest to physicians because they disclose the fact that the immediate etiologic factor in vagrancy is not, in the great majority of instances, economic, as is usually thought, but pathologic. The common impression is that a great many of the vagrants of large cities are men whose advancing years have thrown them out of employment. This is the day of the young man; many firms and corporations refuse to take on men over 40, and some persons think that "the advent of the young man into business has practically crowded the aged into the poorhouse." It was found, on the contrary, that the majority of the men who applied to the New York Municipal Lodging-House were young—indeed, in the very prime of life. Of the two thousand men examined—and they were selected at random—5 per cent. were under 21, while scarcely a greater proportion—altogether 6.85 per cent.—were over 60.

It is generally assumed that in a city like New York, which receives every year many immigrants and in which a large part of the population is of foreign birth, many, if not indeed the majority, of the vagrants will prove to be foreigners who have become a charge on the community because, handicapped as they are by difference of language and of customs, they are unable to make their way in this country. There is an idea too, that a great many of the vagrants in large cities everywhere are not city-born, but have been attracted to the centers of population because of the ease with which an unearned livelihood may be obtained there. New York, as the gateway of by far the greatest part of the immigration of this country, and as the possessor of a municipal lodging-house famous for its comfort, is best situated for the determination of this question.

The report, however, contradicts all of these *a priori* impressions. Of the two thousand men examined, only forty, that is, 2 per cent., had been in this country less than three years, while only 9 per cent. had been in New York less than one year. The average time of residence in the metropolis proved to be thirty-two years and four months; as thirty-six was the average age of the men altogether, they had lived practically all of their lives in the city and the superintendent adds that "practically all of these two thousand were our own native sons."

About 35 per cent. of the homeless men who seek the shelter of the municipal lodging-house are unemployable. Twelve per cent. of them showed definite evidences of defective mentality. The infirm from age and those handicapped by the loss of a member represent about as many more. About 10 per cent. are habitual loafers and confirmed beggars, who have lost the habit of work. Sixty-five per cent. are willing and able to work but are hampered partly by lack of skill and partly by the fact that they are victims of the seasonal trades which employ a great many men at certain times of the year and very few at others, leaving men without any definite occupation for months every year.

Alcohol played an important rôle in the etiology of these tendencies to vagrancy. The report says that about 50 per cent. of these men proved to be excessive drinkers, a fact which is not nearly so significant as the admission of over 30 per cent. that intoxicating liquors were the sole cause of their dependency and wretchedness. The physician's cardinal interest in this social problem is centered in the alcoholism and mental defectiveness, though a great many other cases would be diagnosed under some of the forms of discouragement and psychasthenia, if only the patients could afford to be cared for by physicians who make such diagnoses. When out of work a great many of the men become discouraged and depressed and then are unable to rouse themselves to take up their labor again. The whole problem is one of social aid, rather than punishment and repression, for such men, being unfitted by character for the present struggle for existence, cannot be held responsible for their condition.

In a word, the actual study of conditions in New York, as a typical American large city, emphasizes the need for the physician's interest in social problems. That city may fairly be taken above all to represent other large cities in its relation to our immigration for it retains more than its share. It is, therefore, very clear that vagrancy among us is distinctly an American and not an immigrant problem. It is our own people who need care to prevent the occurrence of social breakdowns that are as serious in their way for the individual and the community as physical breakdowns. The physician probably understands all the factors of the problem as thus presented better than any one else. This is the day of prevention rather than cure, and knowledge is the best possible element in prophylaxis. Undoubtedly social work in connection with dispensaries can do much to relieve this condition and with the decrease of infectious disease social service becomes the physican's next duty in prophylaxis.

THE NERVE-CONTROL OF THE THYROID GLAND

The question as to the innervation of the so-called glands of internal secretion has proved to be one of the most difficult, as it is one of the most important, problems of modern physiology. The belief that an organ like the thyroid, for example, is in some manner under the dominance of the nervous system is fostered by numerous analogies. Other similar cellular structures, notably the secretory glands of the alimentary system, are subject to the influence of direct and indirect nervous control. Vasomotor fibers regulate their blood-supply, and secretory fibers affect more directly the production and discharge of their specific products from the gland-cells. Anatomically, the thyroids furnish an added analogy in that, like the digestive glands, they are richly supplied with nerves. The latter, however, for the most part follow the blood-vessels, which may account for the fact that earlier investigators were content to assign to the thyroid nerves a purely vasomotor function.

As the precise nature of the active product furnished by the thyroid gland is still unknown, it has been practically impossible to search for a secreted substance, after its supposed discharge from the gland, with any sanguine hope of success. Many facts, of course, point to the probability that the active substance in the thyroid contains iodin in combination with protein and that the physiologic activity is in proportion to the quantity of iodin in the combination. Some attempts have been made to demonstrate the presence of this active substance in the blood by means of a biologic reaction, but none of them have thus far been really successful. This is not surprising, however, if one considers how vascular the gland is and how small a quantity of the active agent must be distributed through the blood leaving the gland in the course of the entire day.

Leon Asher[1] and his collaborators at the Physiologic Institute in the University of Berne, Switzerland, have attempted by an indirect method to demonstrate a nerve-control of the thyroid gland. Their experiments were made to determine if any phenomena could be observed, after stimulation of the thyroid nerves, which would indicate that an increase in thyroid secretion discharged into the blood had been produced thereby. Accordingly they compared the excitability of certain nerves before and after stimulation of the thyroid nerves, and also the effect of a small intravenous injection of epinephrin before and after such stimulation. They concluded that, under otherwise exactly similar experimental conditions, a stimulation of the depressor nerve or injection of epinephrin was more effectual during stimulation of the thyroid nerves than shortly before it. That both of the symptoms, namely, the increased excitability of the depressor and the more effective action of epinephrin, actually depend on an internal secretion of the thyroid and not on any accompanying circumstance of nerve stimulation, is proved by the fact that on extirpation of the thyroid the symptoms no longer appeared; while the action of intravenous injections of thyroid extracts was the same as that produced by stimulation of the thyroid nerves.

Realizing, as many other investigators have, that such complicated experiments and indirect evidences, though extremely suggestive, are far from satisfying or conclusive, Rahe, Rogers, Fawcett and Beebe[2] have attacked the problem of nerve-control by experiments of a different character. Briefly, the plan of experiment was to determine, first, whether the iodin content of the two lobes of the normal thyroid gland from the same animal is identical; and secondly, whether stimulation of the nerves leading to one lobe causes a loss in its iodin content. If the two lobes of the normal thyroid are identical in iodin content they may serve as controls of each other. Granting this to be true, it was their hypothesis that stimulation of the nerves entering one lobe might cause a change in the iodin content because of the resulting discharge of iodized protein from the gland.

Although the iodin content varies widely in different individuals, the two lobes are wonderfully constant. From the analytic data supplied by a very accurate method the difference shown falls within the limits of error. It seems evident that one lobe of the thyroid may serve as a control of the other, provided both lobes are normal. The average difference of iodin, expressed as milligrams per gram of fresh gland, between the two thyroid lobes of seven normal dogs was 0.0055 mg. The average difference found when the superior vessels, with accompanying nerve-fibers, of one lobe were stimulated was 0.1351 mg. The average difference found when the stimulus was applied to the vagus peripherally to the superior ganglion, the nerve being cut centrally to the ganglion and ligated peripherally to the stimulus, was 0.1699 mg. The average difference found when stimulus was applied to the intact vagus was 0.264 mg.

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[1] Asher, L., and Flack, M.: Die innere Sekretion der Schilddrüse und die Bildung des inneren Sekretes unter dem Einfluss von Nervenreizung, Ztschr. f. Biol., 1911, lv, 83. Asher, L., and von Rodt, W. E.: Die Wirkung von Schilddrüsen und Nebennierenprodukten und die sekretorische Innervation der Schilddrüse, Zentralbl. f. Physiol., 1912, xxvi, 223. Ossokin, N.: Zur Frage der Innervation der Glandula Thyroidea, Ztschr. f. Biol., 1914, lxiii, 443.

[2] Rahe, J. M., Rogers, J., Fawcett, G. G., and Beebe, S. P.: The Nerve Control of the Thyroid Gland, Am. Jour. Physiol., 1914, xxxiv, 72.

In these experiments, conducted in the department of experimental therapeutics at the Cornell University Medical School in New York, a loss of iodin from the thyroid was observed in every case after nerve stimulation. According to the investigators, there seems to be no reasonable doubt from these results that the thyroid is at least in part under nerve-control, and that its physiologically active substance is discharged into the circulation in response to a nerve stimulus.

EXERCISE AND THE HEART

The importance of acquiring more information than is now available with respect to the physiology of exercise has not lacked emphasis in The Journal.[1] Many of the facts which are learned find an immediate application in the domain of practical medicine and notably in the clinic of cardiac diseases. The enlargement of the heart, for example, may be attributable either to hypertrophy of its musculature or to an increase in its blood-volume. Both of these conditions are affected by muscular activity or exercise, but the interrelations which are involved have never been fully elucidated.

Obviously a precipitate change in the size of the heart must be dependent primarily on changes in its content of blood. Aside from this, however, are those permanent enlargements which represent the result of long-continued vigorous exercise of the heart. They may be conditioned by extreme bodily activity calling for a liberal blood-supply and thus indirectly involving the heart in unusual performance; or they may also be brought about by mechanical difficulties in the circulation whereby the cardiac musculature is compelled to work against an increased peripheral resistance. The effect of long-continued vigorous muscular effort is seen at necropsy in the enlarged heart musculature of those who have engaged in active military service, and in professional athletes. In animals the same functional cardiac hypertrophy appears in race-horses and other species accustomed to vigorous activity instead of the more lethargic existence of many of the domesticated types. This phenomenon of enlargement is familiar and readily explained, for the heart as for any other muscle or groups of skeletal muscles, as the result of systematic use. Our muscles are said to "grow" with exercise.

Less is known, on the other hand, about the *immediate* effects of exercise on the heart. The usual observations ordinarily follow the exertion and give indication of the after-effects only. Experiments on animals involving the direct inspection of the heart in the opened chest are unsatisfactory because the requirements of the circulation are notably altered under such conditions. Roentgenoscopy has furnished a far more adequate method of investigation in this field than was ever available before its introduction. It has reached a high degree of perfection in the hands of Zuntz and Nicolai of Berlin, who have devised a scheme for making observations by means of a stationary ergometer directly on the human subject during the period of work. With such an apparatus they have now collected numerous measurements of the outlines of the heart.[2] These show that during exercise the heart becomes slightly enlarged; immediately thereafter it is suddenly decreased in size below the normal. From the latter fact the German physiologists conclude that ordinarily the heart contains a small undischarged residue of blood which is expelled under the conditions immediately succeeding the cessation of work.

If this interpretation of the temporary diminution of heart-volume following vigorous exercise is correct, the residual blood remaining in the ventricles after a normal systole may be looked on as a reserve supply to meet any emergency call which may suddenly arise in some distant organ, for in such an event the dilatation of these peripheral vessels and the consequent more ready passage of blood would lead to a fall in blood-pressure in the aorta. Obviously under these conditions a constant systolic efficiency would permit a more complete discharge from the ventricle in the face of decreased peripheral resistance. Perhaps this phenomenon is one of the almost innumerable "factors of safety" which are coming to light with the progress of knowledge.

INULIN IN THE DIETARY OF THE DIABETIC

The search for a carbohydrate to replace starch in the dietary of the diabetic patient which will be utilized satisfactorily by him has been a long one. Thirty-five years ago inulin was suggested as a suitable substitute, and its value for the purpose indicated has been under discussion more or less ever since. Inulin is a polysaccharid of levulose, comparable in this respect with starch which is the polysaccharid of dextrose. It occurs in the roots of many of the composites, particularly in the tubers of the dahlia, artichoke, elecampane and other similar plants; so that its use in the dietary might easily come within the range of economic possibility.

No enzymes which can convert inulin into sugar have been found in the digestive tracts of the higher animals. It happens, however, that the normal acidity of the gastric juice is sufficient to effect a partial hydrolysis of inulin to levulose in suitable conditions. This would seem to be the only process, therefore, by which inulin can be rendered available for absorption, unless the carbohydrate is converted into appropriate products by the agency of micro-organisms in the alimentary tract. Dr. H. B. Lewis[1] reviewed the situation in The Journal some time ago. He noted that inulin fed to a healthy man was not eliminated in the feces; but the marked intestinal fermentation which was observed to follow the ingestion of the carbohydrate suggested that it is impossible to administer more than comparatively small amounts without discomfort, and that aside from a possible small formation of levulose in the stomach, the bulk of the product is decomposed with the formation of products other than carbohydrates.

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[1] The Hygiene of Athletic Sport—Rowing, editorial, The Journal A. M. A., April 11, 1914, p. 1172.

[2] Zuntz, N., and Nicolai, G. F.: Füllung und Entleerung des Herzens bei Ruhe und Arbeit, Berl. klin. Wchnschr., May 4, 1914, p. 821.

H. Strauss of Berlin has championed the use of inulin-yielding vegetables which he believes to be employed with advantage by many diabetics. Largely owing to his hearty advocacy, the recommendation of these food materials in the dietary of the diabetic is still continued in current text-books, particularly the Continental ones.[2] Unless it is assumed that inulin as such is actually utilized after absorption or in the form of some unknown and unusual derivative, the probability arises that any available inulin will reach the circulation as levulose. The inulin problem thus becomes one concerning the relative availability of levulose for the diabetic — a question that has been given various answers. At best it can only be said to be tolerated by various diabetics in quite unlike degree.

Inasmuch as it has been shown that levulose readily yields glucose in animals rendered diabetic by phlorhizin, one might expect that any significant conversion of inulin to levulose either in the stomach or elsewhere would manifest itself by a rise in the glucose output in the urine of such subjects. Lewis and Frankel[3] have put the matter to a test, with the anticipated result that no significant amount of extra glucose was eliminated after the feeding of inulin. The feeding of levulose in comparable amounts to the same diabetic animals resulted in an abundant excretion of corresponding extra glucose. There is little probability, therefore, that an appreciable amount of inulin is converted to levulose or to any substance which can give rise to glucose in the diabetic organism. The burden of proof of its usefulness in the dietary of the diabetic ought now, we believe, to rest with those who claim some unexplained virtue for inulin.

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[1] Lewis, H. B.: The Value of Inulin as a Foodstuff, The Journal A. M. A., April 20, 1912, p. 1176.

[2] Strauss, H.: Diätbehandlung innerer Krankheiten, Dritte Auflage, Berlin, 1912, p. 193. Albu, A.: Die Ernährung von Zuckerkranken, nebst praktischen Anweisungen für die Diabeteskűche, Halle, 1912, p. 43.

[3] Lewis, H. B., and Frankel, E. M.: The Influence of Inulin on the Output of Glucose in Phlorhizin Diabetes, Jour. Biol. Chem., 1914, xvii, 365.

Current Comment

LIQUID CHLORIN AND WATER STERILIZATION

"Liquid chlorin" is the name under which liquefied chlorin gas appears in commerce. During the last seven or eight years the manufacture of liquid chlorin has become well established in this country, and the product is said to be displacing bleaching-powder in a number of industries. It is also used in chemical manufacturing industries such as detinning. The gas is generated by the electrolysis of brine and is then dried, compressed and cooled until it liquefies. It is marketed in steel cylinders having a capacity of from 100 to 110 pounds weight. The results obtained by the calcium hypochlorite process in emergency water sterilization have led to experiments with liquid chlorin for the same purpose. Excellent results as to bacterial efficiency have been obtained at Philadelphia and Wilmington, Del. Experimental observations by Jackson at Cleveland and Brooklyn are also favorable. The advantages claimed for the process are economy in cost of installation and operation, simplicity in regulation of the quantity of chlorin applied, and absence of the unpleasant odors and tastes sometimes resulting from the bleaching-powder treatment. Some experimenters are very enthusiastic over the virtues of this new mode of water sterilization,[1] but a wider experience with the practical application of this procedure seems desirable before its general adoption can be confidently urged.

THE TONIC EFFECT OF SYMPATHY WITH OTHERS

Some years ago there appeared in the newspapers an open letter in which a suffering and helpless woman asked aid in securing a law to permit invalids pronounced incurable after a medical consultation to be painlessly put to death.[2] Naturally, the letter attracted attention and reawakened the old question whether or not physicians are ever justified in shortening life. It is of interest, then, to note that the writer of the letter now rejoices at the non-fulfilment of her wish. She has lived to experience how much life may hold even in the face of bodily helplessness and how greatly hope brightens prospects which seem at first so unfavorable. She tells of having received thousands of letters from all over the world containing messages of sympathy and approbation for her daring attempt to secure a modification of present-day laws protective of life. Some of these invalids, she says, have since written her of their cure and of their gladness that conservatism and old-fashioned legislation had intervened between themselves and their impatience. One of these correspondents, who was sure that hope was dead for her and who eagerly desired the "finis" at the end of the chapter, has written of her complete recovery and how much more life now means to her since she has "passed through the shadow of the valley of desolation." This correspondence has proved, as might well be expected, a stimulant and a tonic to the invalid. She feels not only that her contact with others has given them a renewed interest in life, but also that even her mistaken suggestion of a revolutionary change in law has not been without its good effect, since it has drawn together in bonds of deep human sympathy, invalids who felt their helplessness yet were helped by the knowledge of their common lot. It was the touch of nature that makes the whole world kin—and kind. Probably nothing is more stimulating and genuinely tonic to sufferers, especially those with chronic ailments, than the feeling that in spite of their own helplessness they themselves can still be helpful to others. The Shut-in Society in this country has made life more bearable for many persons who are confined to their rooms or their houses. Nothing disturbs a certain class of patients so much as to be constantly in contact with those who are in good health and strength and whom they can scarcely help but envy. To be brought into touch with those for whom they themselves can feel is a precious source of consolation and uplift. Pity is a luxury to be enjoyed, but no human being likes to be pitied or to feel that he is an object of pity. To be conscious of some advantage in one's situation over that of others is of itself an alleviation for many sicknesses.

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[1] Kienle: Proc. Am. Waterworks Assn., 1913, p. 267.

[2] Supplicant for Euthanasia Recovers, Current Comment, The Journal A. M. A., Feb. 28, 1914, p. 705.

Medical News

ALABAMA

Hospital Name Changed.—The trustees of the Holy Innocents Hospital, Birmingham, announce the change of the name of the institution to the Children's Hospital of Birmingham, and furthermore that the institution is free for the care of children from infancy to the age of 14. The ward capacity of the institution is twenty-five.

COLORADO

Corner-Stone Laid.—The corner-stone of the Samuel Grabfelder Medical Building of the National Jewish Hospital for Consumptives was laid June 28. Addresses were made by Governor Ammon, Dr. James M. Perkins, the mayor of Denver, and others.

Health Officers Organize.—At a meeting of the health officers of Colorado held at Boulder, July 1, the Colorado Association of City Health Officers was organized. The scope of the work of the association was outlined, and a committee was appointed to arrange for permanent organization.

Personal.—Dr. Caleb W. Pressnal, Trinidad, has sailed for Europe.——Dr. John L. Schwer, Pueblo, who recently underwent an operation at St. Mary's Hospital in that city, is said to be improving.——Dr. Ross E. Wright, Loveland, sustained serious injuries by the overturning of his automobile, July 5.

ILLINOIS

Hospital Notes.—The new Dispensary for Sick Children, Kewanee, made possible by the efforts of the local women's club, was opened July 1 in the Lyle building on North Tremont Street.——The East St. Louis Board of Health has closed the contagious hospital of that city.

Correction.—Dr. E. Vincent Hale, Anna, states that the announcement of his retirement from active practice, which appeared in The Journal of last week, the information being derived from the Cairo *Bulletin* of July 2, is incorrect, and that he has no intention of retiring from active practice.

Staff Physician Honored.—At the completion of the twenty-fifth year of service of Dr. Otis Johnston on the staff of St. Mary's Hospital, Quincy, the sisters gave a dinner in honor of Dr. Johnston, July 2. A jubilee song was sung and poems in honor of the occasion were read, and many silver gifts were presented to Dr. Johnston.

Personal.—Dr. Whedon W. Mercer, a member of the staff of the Peoria State Hospital, has been appointed assistant superintendent of the Anna State Hospital.——Dr. Arthur L. Hagler, Springfield, who was operated on at St. John's Hospital in that city, recently, is reported to be improving.——Dr. George P. Gill, Rockford, was operated on for mastoiditis at the Wesley Hospital, Chicago, July 8.——Dr. Perry H. Wessel has been reappointed city physician of Moline.——Dr. Edgar H. Little has been appointed postmaster of East St. Louis.

Chicago

Tuberculosis Exhibits in Schools.—The request of the Chicago Tuberculosis Institute that it be allowed to place educational exhibits in several of the social education schools, was granted at the meeting of the school management committee of the board of education, July 17, and the institute was requested to place exhibits in as many of the schools as it deemed profitable.

Koch Society Meeting.—July 16, the Robert Koch Society for the Study of Tuberculosis met under the auspices of the Chicago Tuberculosis Institute at the City Club. The subject discussed was "Tuberculosis of the Bones and Joints: Its Present Status." Dr. Charles M. Jacobs read a paper on "Etiology and Pathology," Dr. John L. Porter, on "Non-Surgical Treatment," Dr. Edward W. Ryerson on "Surgical Treatment." The discussion was opened by Dr. John Ridlon.

Personal.—Dr. Nathan S. Davis, who was operated on at the Presbyterian Hospital for the removal of gall-stones, June 30, has made a good recovery and is convalescing at his home in Lake Forest.——Dr. and Mrs. William Fuller, Dr. John B. Murphy, Dr. and Mrs. George T. Tristram, Dr. Charles Davison, Dr. William L. Abbott, Dr. and Mrs. Jabez D. Hammond and sons, Dr. Truman W. Brophy and Dr. Emilius C. Dudley and daughter have gone abroad.——Dr. Andrew M. Harvey is ill with typhoid fever at the West Suburban Hospital, Oak Park.

INDIANA

Children's Dispensary and Hospital Incorporated.—The Children's Dispensary and Hospital Association of South Bend was incorporated, July 3, with the following directors: Drs. Charles E. Hansel, Roscoe L. Sensenich, Hugh M. Miller, Edwin J. Lent and others.

Free Clinics Resumed.—After an intermission of a month, the free clinics of the Hillside Christian Church, Indianapolis, for the treatment of diseases of the eye, ear, nose and throat, was resumed, July 10. Free clinics for children will be conducted by Dr. Homer W. Cox on Tuesdays and Thursdays from 2 to 4 p. m.

Milk Clinic Opened.—The new pure milk clinic was opened July 9, under the direction of the Indianapolis Children's Aid Association at the College Mission Settlement, Haughville. Clinics are held each Monday and Thursday morning from 8:30 to 9:30, in charge of Dr. Frank McCool.——A new milk station will be opened by the Flanner Guild in Culvert Street, and will be in care of Dr. Harry Conner.

Personal.—Dr. Frank H. Jett, Terre Haute, coroner of Vigo County, is reported to be seriously ill with pneumonia complicating typhoid fever, in London, England.——Dr. John P. Herrington, Logansport, local surgeon of the Pennsylvania System, was awarded a sphygmomanometer for the best essay on surgery at the annual conference of surgeons of the Pennsylvania lines, east and west, held recently in Atlantic City.

KENTUCKY

University Sells Hospital.—The Board of Education of Louisville has purchased the city hospital building at South Sixth Street, from the University of Louisville for $40,000. The building will be remodeled for a graded school for white children.

To Relieve Congestion at State Hospital.—Congestion in the three state hospitals will be temporarily relieved by the construction of a common dining-hall at the Western State Hospital, Hopkinsville. This dining-hall will cost $30,000, but will take the place of twenty-five dining-rooms in the various buildings of the institution, and these will be transformed into sleeping quarters for about two hundred patients. The additional accommodations will permit the transfer of several patients from the Lakeland and Eastern State Hospitals.

MARYLAND

Personal.—Dr. Charles L. Mattfeldt, of Catonsville, has returned to his home from the Baltimore Eye, Ear and Throat Hospital, where he underwent operation.——Drs. Randolph Winslow, Baltimore, and Edwin B. Claybrooke and James T. Johnston, Cumberland, have sailed for Europe.

More Money for Medical School.—In addition to the general fund of $1,500,000 recently given to the Johns Hopkins University Medical School, Baltimore, the General Educational Board is said to have appropriated a fund of $50,000 for the development of the Hunterian Laboratories of the school.

Montevue Asylum Closed.—The State Lunacy Commission has transferred all the insane patients from Montevue Asylum, Frederick county, to state hospitals for the insane, which means that this institution will now be closed. It is the first county asylum in the state to be relieved of the care of the insane, and tends toward the gradual elimination of county asylums.

Health Department Moves.—The Health Department of Baltimore, the State Board of Health and Department of Vital Statistics are now located in the old Polytechnic Building on Portland Street, which has been remodeled for their use. The first and second floors are given over to the offices of Health Commissioner Gorter and his assistants. On the third floor are the State Board of Health and the nurses connected with the department of Vital Statistics, and the chemical, pure food and dairy supply departments are on the fourth floor.

State Health Survey Commenced.—The state and national health authorities began on July 7 the sanitary survey of Maryland. It was begun in Dorchester County. It is proposed to visit and inspect every house, and carry on health propaganda by public meetings, moving pictures and health exhibits, and all other means of emphasizing the importance of sanitation and health. The survey board consists of Dr. John S. Fulton, State Board of Health, Dr. Leslie L. Lumsden, U. S. P. H. S., and Drs. Josiah H. Bowen, Washington, William C. Stone, Ellicott City, Caldwell Woodruff, Baltimore, Alexander M. Stevens, Easton, and Richard B. Norment, Baltimore.

Staff Changes.—Dr. Karl H. Van Norman, for the last two years chief admitting physician of Johns Hopkins Hospital, has been selected as first assistant superintendent of the hospital, to succeed the late Rupert Norton, who died a month ago. Dr. Henry A. Stephenson, resident obstetrician, and Dr. Frank Hinman, assistant resident surgeon, have accepted appointments to the staff of the Leland Stanford Medical School of San Francisco. Dr. Stephenson will be succeeded by Dr. Everett Dudley Plass, who was called to a New York hospital. Dr. Ralph Seem, for the last two years in charge of the dispensary and third assistant to Supt. Winford H. Smith, has been designated as second assistant, succeeding Dr. Van Norman as chief admitting physician.

MINNESOTA

Southern Minnesota Physicians to Meet.—The mid-summer meeting of the Southern Minnesota Medical Association will be held in Winona, August 20 and 21.

Counties Build Sanatorium.—Beltrami, Koochiching and Hubbard Counties are uniting to build a sanatorium for tuberculosis, which will probably be located near Lavina, on Bass Lake.

Tuberculosis Quarantinable.—The State Board of Health July 14 officially declared tuberculosis to be a communicable disease and subject to certain regulations. These regulations include the isolation of tuberculosis patients in a sanatorium or at home, the care of the patients in the early stages of the disease, and the enforcement of quarantine rules.

School of Public Health.—It is proposed to establish a school of public health at the University of Minnesota, and a meeting was held to discuss plans for the school, July 13. The instruction is to be entirely by the present teaching staff, and will include the consideration of the subject from a medical as well as from a modern sanitary engineering standpoint.

Personal.—Dr. William B. Lande, St. Paul, has recovered from his recent severe illness and resumed practice.——Dr. and Mrs. James L. Lynch, Winona, Drs. Olaf J. Hagen and Edward W. Humphrey, Moorhead, have sailed for Europe.——Drs. Robert I. Hubert, Edward Schons and Charles E. Smith have been appointed medical inspectors of the St. Paul Department of Health.

District Sanatorium Desired.—Lyon, Cottonwood, Nobles, Murray, Pipestone and Lincoln counties sent representatives to Pipestone June 18 to promulgate plans for establishing a district sanatorium for tuberculosis. At a meeting to be held in Tracy, July 21, the matters of site, plans and specifications will be discussed. Of the three remaining counties of the district, Rock and Redwood counties are still undecided, and Jackson county has declined to unite with the organization.

MISSOURI

Personal.—Dr. and Mrs. John. D. Pifer, Joplin, have returned from abroad.——Dr. Charles Sandy, of the staff of the Emergency Hospital, Kansas City, was seriously injured, July 9, in a collision between a motor-ambulance and a motor-truck.

St. Louis

Personal.—Dr. and Mrs. Walter Fischel have returned from Europe.——Dr. Albert May has started on an automobile trip to San Francisco.

MONTANA

Personal.—Dr. Charles R. Blake, Butte, has moved to Dillon, where he will be associated in business with Dr. Harry A. Bond.——Dr. Arthur G. Allen, Butte, has been appointed a member of the examining board of the municipal police department.

Health Officers' Meeting.—The annual meeting of the Montana Health Officers' Association was held in Lewistown, July 7; and the following officers were elected: president, Dr. Arter W. Deal, Lewistown; vice-president, Dr. Clyde W. Jump, Bozeman, and secretary, Dr. William F. Cogswell, Helena.

State Medical Society Meeting.—The twenty-sixth annual meeting of the Montana State Medical Association was held in Lewistown, July 8 and 9, under the presidency of Dr. William P. Mills, Missoula. The following officers were elected: president, Dr. James H. Irwin, Great Falls; vice-presidents, Drs. John C. Schapps, Butte; Clyde W. Jump, Bozeman, and Paul L. Greene, Livingston; secretary-treasurer, Dr. Elmer G. Balsam, Billings, and councilors, Drs. Clyde W. Jump, Bozeman; Drura R. Claiburn, Big Timber, and Benjamin C. Brook, Helena. It was decided to hold the next meeting in Bozeman.

NEW YORK

Personal.—Drs. Arthur W. Elting, Howard Van Rensselaer, Herman C. Gordinier, and John A. Sampson have resigned from the faculty of Albany Medical College.——Dr. Frederick W. Sears has been elected temporary president of the Syracuse Advisory Recreation Commission.——Dr. Sherman Voorhees, Elmira, was seriously injured in an automobile accident, July 5, in which Mrs. Voorhees was instantly killed, and their son, Sherman P. Voorhees, painfully injured.

Drug Traffic in Penitentiary.—In a hearing on July 8, in reference to the alleged drug traffic and the extent to which drugs were being used in Sing Sing prison, Ex-Warden John M. Clancy testified that the extent of the drug traffic in the prison is appalling, but he said, furthermore, that the sanitary conditions of the prison are worse and that tuberculosis, pneumonia, and rheumatism are as dangerous menaces as the smuggled drugs. It was brought out that at least forty keepers have been in the habit of assisting in smuggling drugs to the prisoners. Mr. Clancy testified that drugs were smuggled into the prison in almost untold quantities and in ways that were most uncanny. He claimed that many times during the time he held office he had endeavored to get a hearing for the purpose of altering conditions but had been unable to do so. The histories of many of the prisoners show to what a large extent the drug habit has been responsible for crime.

State Health Department Activities.—The State Health Department has just sent out a special bulletin in which the sanitary code established by the Public Health Council of the state is printed in full. The department plans to report each month the current progress along health lines in the cities and towns of the state. The annual and monthly reports of local health departments will be briefly reviewed and health officers are urged to see that the state department receives all their publications for this purpose. Reports of all civic and philanthropic organizations dealing with the public health will also be welcome. It is also urged that the supervisors of the department be kept informed of any happenings of unusual interest such as epidemics and new developments in administrative and educational work. There have been twelve sanitary inspectors appointed from the list certified by the Civil Service Commission and they have already entered on their duties. These are: Drs. Edward Clark, Buffalo; Frederick W. Sears, Syracuse; Harry H. Crum, Ithaca; John J. Mahoney, Jamestown; Charles S. Prest, Waterford; LeRoy W. Hubbard, Mt. Vernon; John Archibald Smith, Saranac Lake; John A. Conway, Hornell; Charles C. Duryee, Schenectady, and Charles V. Pachin, Dansville. Dr. Samuel D. Hubbard of New York City was also appointed but has resigned.

New York City

Small-Pox Comes to Port.—The steamship *Batavia* from Hamburg, which came to port on July 5, was held in quarantine because one of the steerage passengers was ill with small-pox. Seventy-seven passengers were held at quarantine for observation.

Care for Children with Sick Mothers.—An institution which will care for children whose mothers are ill in hospitals or sanitaria will be opened next month at Far Rockaway under the auspices of the Ladies Auxiliary of Temple Israel. A house has been secured on Hollywood Avenue, which will accommodate fifteen children.

Floating Hospital Begins Season.—The steamer *Helen C. Juilliard*, floating hospital of St. John's Guild, entered its eighteenth year of service, July 6. The steamer plies between New York and Staten Island, and infants who are seriously ill are removed to the Seaside Hospital, Staten Island. About 1,200 children are carried by the boat on each trip.

Vaccination in the Parochial Schools.—With the special appropriation which the Department of Health secured for the purpose, vaccination has been going on in the parochial schools of the city. During the month of May there were 69,354 children vaccinated in these schools. It is stated that only a little over 6 per cent. of the children refused vaccination. The authorities of the parochial schools cooperated in every way to have the children under their care given the same protection against small-pox as is given the children in the public schools.

Another Conservation Program.—The Equitable Life Assurance Society offers from July 1, free physical examinations, chemical tests and health reports to policy holders whose insurance has been in force for three years or longer, by the society's salaried examiners. It is agreed that if any large proportion of the policy holders get the habit of having periodical examinations or health reports, either through the Equitable service or through their own physicians, the average health of the members will be improved and the average length of life will be prolonged.

Personal.—Dr. Oscar Teague of the Cornell University Research Laboratory has been appointed director of the new bacteriologic laboratory at Quarantine.——Among those who have sailed for Europe recently are Dr. Samuel B. Moore Dr. Charles Ogilvy, Dr. and Mrs. Joseph F. Todd, Dr. and Mrs. Moses S. Kakels, Dr. and Mrs. George K. Swinburne, Dr. George M. Swift, Dr. and Mrs. John E. L. Davis, Dr. and Mrs. Charles N. Dowd, Dr. William H. Luckett and Dr. and Mrs. Louis Faugeres Bishop.——Dr. Frederick W. Loughran has been appointed chief medical adviser of the State Insurance Department of Workingmen's Compensation Commission.——Dr. Thomas A. McGoldrick, Brooklyn, has been appointed chief consulting surgeon to the new St. Anthony's Hospital, Woodhaven.——Dr. Herman B. Sheffield has been awarded the Alarenga prize for his essay entitled: "Idiocy and Allied Mental Deficiencies of Early Childhood."

OHIO

May Deport Leper.—The case of Salvatore Paluso, declared to be suffering from leprosy, has been officially referred to the United States Inspector of Immigration, J. A. Fluckey, with a view to his deportation.

Society Honors Departing Member.—A banquet was given in Xenia, July 2, by the Greene County Medical Association in honor of Dr. and Mrs. Samuel S. Wilson, who left the next day for their new home in Ozona, Fla.

Hospital Corps Mustered.—The Third Field Hospital Ohio N. G., was mustered into service at Youngstown, June 30, with an initial personnel of twenty-nine. Major William P. Love has been assigned to command the organization.

Personal.—Dr. Henry M. Osborne, Youngstown, and Dr. and Mrs. Birt Garver and daughter, Lorain, have sailed for Europe.——Dr. Judson A. Hulse, Akron, has obtained permission from the common pleas court to change his name to the original family name, Van der Hulse.

Leprosy in Cleveland.—A case of leprosy has been discovered at the City Hospital, Cleveland. The patient is a man of 28. He has been isolated from the other patients and placed in the contagious ward of the hospital. This is said to be the third case of leprosy discovered in Cleveland.

Tuberculosis Fighters Meet.—The thirteenth annual meeting of the Society for the Prevention of Tuberculosis was held in Columbus, June 30. Dr. Gilbert E. Robbins, Chillicothe, was elected president, and Dr. Chester B. Bliss, Sandusky, a director. The society recommended the following measures for the work of the state: Renewed campaign for the establishment of a state public health day. Cooperation with the State Board of Health, which has taken over the active antituberculosis work in Ohio. Extension of scholarships to trained nurses to fit them for special work in instructive visiting nursing, through training in the antituberculosis work of the larger cities of the state. The inauguration of an active educational campaign against so-called tuberculosis remedies, through which the sick are being exploited. The amendment of the state tuberculosis hospital law to eliminate the county medical examiners for the Mt. Vernon institution and to abolish the $5-a-week charge, which has been found to bar many patients needing treatment. The establishment of a bureau under the State Board of Health to keep in direct touch with the patients in the various state districts and municipal hospitals.

Civil Service Commission Permits Aliens to Take Its Examinations.—The State Civil Service Commission of Ohio has for the first time in its history lifted the bars for applicants who desire lucrative positions under the government of that state. On August 4 a special examination is to be conducted by this commission to secure a list of competent employees to man the newly organized Bureau of Juvenile Research. Hereafter, instead of committing delinquent children directly to an institution, the courts of Ohio will commit them to the Board of Administration. They will be detained in a special department, to be known as the Bureau of Juvenile Research, until their mental and physical condition shall have been determined to a certainty. Then they will be committed to proper institutions for treatment. This advanced method of receiving children, charged with having violated some state law, is so unusual that Ohio is anxious to get the best employees possible for this department, and has therefore issued a call open to any resident of the United States to take part in the special examination to be conducted on August 4. Any one desiring to take this examination should be experts in pathologic and psychologic work. They should address the State Civil Service Commission at Columbus, Ohio, and the necessary blanks will be sent at once. On these blanks the examination will be conducted, and it will not be necessary for the applicant to leave his home to participate in them. Good salaries will be provided for the places by the state of Ohio. Among those wanted are a psychologist, a laboratory worker, diagnostician, field workers and laboratory workers. The competitive examinations ordered are for the following positions: 1. Psychologist: psychologic examination and grading of juvenile commitments to the Ohio Board of Administration. Experience and thesis (one to be appointed). 2. Laboratory worker: experienced in pathologic research. Experience and thesis (one to be appointed). 3. Diagnostician: experience and thesis (one to be appointed). 4. Field workers: experienced in the investigation of heredity and environmental traits, and the collection of family histories and statistics. Experience and thesis (three to be appointed). 5. Laboratory workers: experienced in giving the Binet-Simon and other similar mental tests (two to be appointed). Salaries to be fixed by the Board of Administration. Application blanks may be secured from the State Civil Service Commission, Columbus, Ohio. Questions will be sent to applicants and answers mailed to this office. All final papers must be in the hands of the State Civil Service Commission on or before 5:30 p. m. August 4.

OKLAHOMA

Hospital Opens.—St. Mary's Infirmary, McAlester, was recently opened for the reception of patients. All reputable practitioners have access to the institution.

Disease Prevention Day.—Dr. J. C. Muir, commissioner of health of Oklahoma, is actively engaged in organizing the state for the observance of disease-prevention day, which is fixed for October 3.

Personal.—Dr. John L. Houseworth, Guthrie, has been appointed local surgeon to the Fort Smith and Western Railroad.——Dr. Kelley D. Gossom, Custer, and Arthur S. Risser, Blackwell, are reported to be convalescent after surgical operations.——Dr. Alva A. West, Guthrie, who was to have sailed for Europe, July 10, sustained a sunstroke June 28, and was taken to the Methodist Hospital, where he is reported to be improving.

PENNSYLVANIA

Off for Europe.—Dr. James F. Saltry, Dr. Arthur H. Bernstein and Dr. Patrick H. Kearney, Scranton; Dr. and Mrs. Charles D. Schaeffer, and Dr. Charles H. Schlesman, Allentown, and Dr. Roger R. Rupp, Coplay, have sailed for Europe.

Hospital Corner-Stone Laid.—The corner-stone of the Brownsville General Hospital was laid July 9, with imposing ceremonies. The hospital will be completed January 1, and will cost $75,000. It will have two surgical and two medical wards.

Employers Must Report Accidents.—John Price Jackson, head of the Department of Labor and Industry of the state, in his report for June issued a warning to all employers that he will prosecute those who neglect to send a report of every accident in their factories to the State Labor Commission.

Common Drinking-Cups Abolished.—On July 16 the Pennsylvania Railroad issued an order requiring all common drinking-cups in its train service to be abolished. This means that on locomotives, where fireman and engineer used the same cup, each in the future will have to have his own and the order will also be effective in the cabooses or wherever the train crews are concerned.

Licenses for Masseurs and Healers Required.—Dr. John M. Baldy, head of the State Bureau of Medical Education and Licensure, announced, July 16, that all persons practicing massage, or allied branches of healing, including medical gymnastics, electrotherapy, etc., would be required to take out licenses to practice in this state and must make application for them before November 1.

Study Industrial Diseases.—Dr. Samuel Scholes, superintendent of the Milton Institute for Industrial Research, and Mr. J. O. Handy, Pittsburgh Testing Laboratory, have been appointed members of the Committee on Occupational Diseases of the American Chemical Society. The work of this committee is to make a thorough investigation of occupational diseases, with especial reference to the prevention of such diseases from a technicologic viewpoint.

Philadelphia

Personal.—Drs. Burton A. Randall and Richard F. Woods have sailed for Europe.——Dr. Robert N. Wilson has been appointed a member of the visiting staff of the Philadelphia General Hospital, vice Dr. William E. Hughes, resigned.

Hospital Buys Land.—The Mt. Sinai Hospital has purchased the dwellings at 438, 440 and 442 Wilder Street, on which it is proposed to enlarge the present hospital buildings. The plot of ground acquired is 42 by 40 feet.

Milk Tax.—The Health Department intends to enforce the new regulations governing the sale of milk to the extent of supervising soda water fountains and liquor saloons and the license fee of $5 that is required by law will be collected from all proprietors who dispense milk.

Woman Fined for Breaking Quarantine.—A woman resident of one of the suburbs of the city was fined $100 and costs by a magistrate for violating provisions of the state health laws by causing a maid suffering from measles to be removed from her home after quarantine had been established.

Carnival of Safety.—The General Carnival Committee of the Carnival of Safety, to be held in this city September 21-29, plans to include a reconstructed Fourth of July exhibit, the purpose of which will be to put in a form readily understood reasons for the discontinuance of all methods of celebrating Independence Day which are inimical to life.

Community House for Mothers Opened.—A three-story building at 1401 South Front Street, to be known as the First Ward Community House for Mothers and Babies was opened July 9, and weekly baby clinics will be held beginning July 16, under the general supervision of Dr. W. F. Newmeyer of the Bureau of Child Hygiene.

To Forbid Sale of Firearms to Boys.—Judge Brown of the municipal court, July 9, gave instructions that all firearms taken from boys in juvenile court are to be tagged, showing the circumstances of the seizure, that they may be presented before the legislature next fall as concrete reasons for the passage of a law against the indiscriminate sale of firearms.

Suit for Housing Money.—On behalf of the new division of housing and sanitation, a new suit to compel councils to make an appropriation for its organization will be brought in the name of the commonwealth. The commission proposes to obtain a writ of mandamus, directed to both select and common councils to compel them to make an appropriation for the payment of the salaries of the employees of the division. This councils have repeatedly refused to do since the creation of the division by the Act of July 22, 1913.

West Philadelphia's Water-Supply to Be Doubled.—The water-supply provided by the Belmont pumping station will be doubled by new equipment for which contracts aggregating nearly $200,000 were let by the director of public works, July 17. Two centrifugal pumps of 20,000,000 gallons daily capacity will be installed to replace two 10,000,000 gallons reciprocal pumps; six vertical water-tube boilers of 500 horsepower each will replace the five in use at present. Other contracts include piping, fans, turbines, small pumps, water-softening tanks, etc.

Campaign against Cigarette Dealers.—A campaign against dealers selling cigarettes and cigarette papers to minors, in violation of a law passed in 1913, was begun in this city July 17, by Judge Brown, of the juvenile court. Summary action will be taken in every case brought before the juvenile court, and the full penalty of the law, which provides for a fine of not less than $100 and not more than $300, will be imposed. On July 13, a woman who kept a cigar store at Germantown Avenue was held under $500 bail for court on the testimony of five small boys, who said she had sold them cigarettes at the rate of three for a cent. It developed that numerous dealers were engaged in this practice.

GENERAL

Southern Surgeons to Meet.—The annual meeting of the Southern Medical Association will be held in Richmond, Va., November 9-11, under the presidency of Dr. Stuart McGuire, Richmond.

Railway Surgeons to Meet.—The eighth annual meeting of the Minneapolis, St. Paul and Sault Ste. Marie Railway Surgical Association will be held in Ashland, Wis., September 9 and 10. On the morning of the first day the president, Dr. John M. Dodd, will give a clinic in St. Joseph's Hospital. A clam-bake is to be given in honor of the Soo physicians by the Badger Clam Bake Club of Ashland.

District Society Meeting.—The annual meeting of the Iowa and Illinois Central District Medical Association was held in Davenport, Iowa, July 9, and the following officers were elected: president, Dr. Frank H. Gardner, Moline, Ill.; vice-president, Dr. Charles S. Young, Geneseo, Ill.; secretary, Dr. Lawrence W. Littig, Davenport, Iowa, (reelected); and treasurer, Dr. Frank H. First, Rock Island, Ill. (reelected).

Prevention of Infant Mortality.—The American Association for the Study and Prevention of Infant Mortality will hold its annual meeting in Boston, November 12-14. The work of the association will be taken up under sections of nursing and social work and vital and social statistics. The first general meeting will be held jointly with the Massachusetts State Conference of Charities.

Congress for Sexual Research.—The first International Congress for Sexual Research will be held in Berlin, October 31-November 2. The congress will consider all questions regarding sexual research under the following sections: biologico-medical section; section on sociology; legal section and section of philosophy, psychology and pedagogics. Sanitätsrats Albert Moll, Berlin W. 15, Kurfürstendamm 45, is chairman of the committee on arrangements.

Tri-State Meeting.—The semi-annual meeting of the Northern Tri-State Medical Association (Michigan, Indiana and Ohio) was held in Lima, Ohio, July 14. The following officers were elected: president, Dr. James A. Duncan, Toledo; vice-president, Dr. John C. Fleming, Elkhart, Ind.; secretary, Dr. George W. Spohn, Elkhart, Ind. (reelected); and treasurer, Dr. Joseph A. Weitz, Montpelier, Ohio (reelected). The next semi-annual meeting will be held in Elkhart, Ind.

Roentgenologists to Meet.—The American Roentgen-Ray Society will hold its fifteenth annual meeting at the Hotel Stadtler, Cleveland, Ohio, September 9-12, under the presidency of Dr. Sidney Lange, Cincinnati. Among those who will be present are Dr. Frederick Dessauer, Frankfort, Germany, who will read a paper on "The Artificial Production of Gamma-Rays," Mr. Reginald Morton, London, England, and Dr. W. S. Barclay, Edinburgh, Scotland. Papers will also be read by Dr. Coolidge, inventor of the Coolidge tube, Shearer and Duanne. The subject of deep therapy and the production of hard rays will be fully discussed.

Mouth Hygiene Experts Meet.—The Mouth Hygiene Association held its annual meeting in Rochester, N. Y., July 11 and 12, and elected the following officers: *president*, Dr. Harvey W. Wiley, Washington, D. C.; vice-presidents, Drs. William A. Evans, Chicago; Oscar Dowling, New Orleans; William R. Malone, New York City, and Surg.-Gen. Rupert Blue, U.S.P.H.S.; and secretary-treasurer, Dr. William G. Ebersole, Cleveland. The association authorized the appointment of a commission to revise the regulations of the society, making it a "corporation not for profit," under the laws of the United States in the District of Columbia and the state of Ohio.

Bequests and Donations.—The following bequests and donations have recently been announced:

Associated Jewish Charities, Chicago, $5,000; Home for Destitute Crippled Children, $1,000; Michael Reese Hospital, $2,000, by the will of Nathan Friend.

Beverly, Mass., Hospital, $5,000, by the will of Miss Sarah Warner Clark.

State Sanatorium for Consumptives, Sabillasville, $1,000, by the will of Mrs. Elizabeth Miller in memory of her son.

O'Conner Sanitarium, San Jose, Cal., $25,000, by the will of Dr. G. W. Seifert.

Hebrew Orphan Asylum, Mount Sinai Hospital, Home for Aged and Infirm Jews, and Young Women's Hebrew Association, equal shares of $81,016, by the will of Constant Mayer.

Massachusetts General Hospital, Boston, $5,000, by the will of Susan C. Dove, Andover.

Boston Floating Hospital, $1,000, by the will of Henry K. Barnes, *Boston.*

Philadelphia Home for Incurables, $5,000, Children's Seashore Home, Atlantic City, Children's Aid Society, Pennsylvania Branch Shut-In Society, Philadelphia Sanatorium Association, Epileptic Hospital and Colony Farm, Oakburne, Pa., Lying-In Charity and Nurses Training School, Rush Hospital, Philadelphia, Philadelphia Free Hospital for Poor Consumptives; Wills Eye Hospital and Germantown Dispensary, each $2,800 by the will of Mrs. Jane S. Echternach.

The Care of Lepers.—In the Section on Dermatology at the Atlantic City session, of the American Medical Association, papers were read proposing legislation for the establishment of a national leprosarium for the care of lepers in the United States, whose number seems to be increasing. Only three states have made provision for the care of lepers. Attention is called to the work of the Mission for Lepers which is an international, interdenominational institution for the care of lepers in all countries and has connection with the various foreign church missions. This organization is doing most commendable personal work for lepers. It was established thirty-six years ago and has derived its principle support heretofore from Great Britain. The United States has made some contribution but not sufficient to take care of its own lepers and for the support of this work in the American missions abroad, of which there are twenty-seven stations which care for lepers. An instance of the personal nature of the work is the case of an American boy who, while in the Navy, apparently contracted leprosy from the operation of tattooing while on an oriental trip. He was sent to the baths in Japan by a brother who subsequently died, and the boy was sought out and became a charge of Miss Ridell's Hospital for Lepers at Kumamoto, Japan, where there are two American men and one American woman being cared for. Cases like these are sought out by members of this leper mission wherever they may be, all of which, of course, entails considerable expense, and an appeal is made for funds for the support of this deserving work. William Danner, 105 Raymond Street, Cambridge, Mass., is the secretary of the United States committee, and Miss Bertha G. Johnson, 816 West Fifty-First Street, Chicago, is field secretary for the United States.

Rockefeller's Institute Changes.—The Board of Scientific Directors of the Rockefeller Institute for Medical Research announces the following appointments and promotions: Dr. Hideyo Noguchi, hitherto an Associate Member in the Department of Pathology and Bacteriology, has been made a Member of the Institute. Dr. Alfred E. Cohn, hitherto an Associate in Medicine, has been made an Associate Member for the term of three years. Dr. Wade H. Brown, hitherto an Associate in the Department of Pathology and Bacteriology, has been made an Associate Member for the term of three years. The following Assistants have been made Associates: Harold Lindsay Amoss, M.D. (Pathology and Bacteriology); Arthur William Mickle Ellis, M.D. (Medicine); Thomas Stotesbury Githens, M.D. (Physiology and Pharmacology); Israel Simon Kleiner, M.D. (Physiology and Pharmacology); Alphonse Raymond Dochez, M.D. (Medicine); Dr. Dochez has also been appointed Resident Physician in the Hospital of the Rockefeller Institute to succeed Dr. Swift. The following Fellows have been made Assistants: Frederick Lamont Gates, M.D. (Physiology and Pharmacology); Louise Pearce, M.D. (Pathology and Bacteriology). The following new appointments are announced: Chester Harmon Allen, M.S., Fellow in Chemistry; Alan M. Chesney, M.D., Assistant Resident Physician and Assistant in Medicine; Harold Kniest Faber, M.D., Fellow in Pathology; Ross Alexander Jamieson, M.D., Assistant Resident Physician and Assistant in Medicine; Benjamin Schönbrun Kline, M.D., Fellow in Physiology and Pharmacology; John Jamieson Morton, Jr., M.D., Fellow in Pathology; James Kuhn, Fellow in Chemistry; Joseph Richard Turner, M.D., Fellow in Pathology.——Dr. Paul Franklin Clark, formerly Associate in Pathology and Bacteriology, has been appointed Assistant Professor of Bacteriology in the University of Wisconsin.——Dr. Homer F. Swift, formerly Resident Physician in the Hospital of the Rockefeller Institute, and Associate in Medicine, has been appointed Associate Professor of Medicine at the College of Physicians and Surgeons, Columbia University, and Associate Attending Physician, Presbyterian Hospital.

The Plague Situation.—During the past week, Passed Assistant Surgeon R. A. Kearny, Assistant Surgeon Francis A. Carmelia and Acting Assistant Surgeon Mark D. Holds have been added to the plague eradicative staff. From July 12 to 18, 6,307 rats were trapped, and 6,863 rodents were examined. Sixteen suspicious rats were found, of whom six have already proved positive. During the week, three human plague cases have been discovered, one of whom, that of Elizabeth Domingo, has already been mentioned. The sixth case was that of Helen Soell, a white female, aged 10, residing at 522 Camp Street, who sickened July 16, with a right femoral bubo. Plague was diagnosed two days later, the patient was removed to the Isolation Hospital, and Yersin's serum was administered. The seventh case was discovered on July 19. The patient was Philomene Glation, a colored female, 15 years of age, residing at 1131 St. Philip's Street. This infection, like the sixth case, has been traced to the original and only foci, and the patient has been removed to the Emergency Hospital. Of the seven patients, three have died, two are convalescent and the last two are very ill. Elizabeth Domingo, the fifth case, received the serum in large doses, and is said to be in good condition. The plague rodents were found at 1904 Magazine Street, Burgundy Street, 529 Religious Street, 525 South Peters Street and 434 South Rampart Street. A complete inspection of all outgoing freight for overland and over-sea has been organized, and outgoing quarantine of ships still continues. During the week ninety-five bodies were inspected, and in three cases special necropsies were made. Special market inspectors have been appointed for the French, Poydras, Dryades and Magazine Markets. The bacteriologic department of the State Board of Health, under the direction of Dr. William H. Seemann, and his associate, Dr. Charles C. Bass, has manufactured a satisfactory supply of anti-plague serum, some of which was given on July 18, to Dr. Oscar Dowling, president of the State Board of Health, and to employees. While it has not been made compulsory, the use of serum is encouraged. No charge is made for its administration. The clean-up campaign, under the direction of the United States Public Health Service, working in cooperation with the New Orleans Board of Health, and the Louisiana State Board of Health, is being carried on vigorously, and before long it is expected that New Orleans will be the southern sanitary seaport city free of rats. The campaign of publicity and education is being actively continued. In addition to the meetings previously reported, meetings have been held at the First Christian Church, Real Estate Board, Louisiana Sugar and Rice Exchange, Mother's and Parent's Club, Association of Commerce, Seventh Ward Civic League, Dryades Church, Contractors' and Dealers' Exchange, Pan-American Medical Association, and with the Citizens' Health Committee. These meetings were addressed by Asst. Surg.-Gen. William Colby Rucker, U.S.P.H.S., and other officers of the Service stationed in New Orleans. Many of the lectures were illustrated by stereopticon views. The Citizens' Health Committee has appointed a leader in each ward, to organize a committee to have general charge of the clean-up campaign. The women of New Orleans have formed volunteer committees on hotels, restaurants, markets and publicity and education, and these committees have begun their work with most stimulating effect. The city council has under consideration the ordinances previously mentioned, and it seems probable that they will pass. Many persons have begun rat-proofing, and there is already a marked improvement in the sanitary condition of the city.

In order that the public may be kept fully informed as to the plague situation in New Orleans, postal-card notices are sent out daily by the president of the State Board of Health, Dr. Oscar Dowling, advising health officers throughout the state as to progress of old and the occurrence of new cases. Circular letters are also sent out giving more complete information in regard to the plague situation and urging the cooperation of all officials and citizens in cleaning up and rat-proofing their cities. These letters are addressed to parish and municipal health officers and to the mayors of cities and towns. Accompanying these letters is a bulletin containing a schedule of measures to be carried out on a clean-up day as follows: Begin with destruction of all trash or débris. Give particular care to stables, chicken coops, closets and corners used for piles of rubbish. Fill in rat holes with brick, stones or concrete. Tear up plank floors of stables, etc. Rat proof, if possible, barns, stables, etc., with tin, galvanized iron or concrete. Barrels, boxes, bins and receptacles for storing food or other materials should be put on pillars, 2 feet above ground. Manure should be kept in rat and fly proof bins. Provide metal garbage cans with tight covers. If there is no daily scavenger and garbage service, ask the town authorities to provide it. Ask that garbage be collected daily. Help the garbage man by wrapping garbage and placing it conveniently at the proper hour. Don't allow garbage or other refuse to be thrown on vacant lots around your premises. Watch and report, for your own protection, insanitary conditions in your neighborhood. Tell your neighbors to do the same. Keeping premises clean is a question of daily effort. Help the health officers to help you. Your duty: Obey the sanitary regulations. Trap rats, dip in kerosene to kill fleas. Protect all foodstuffs and garbage from rats. Make rat proof all buildings which furnish rat-harboring places. Destroy breeding places of flies and mosquitoes. Keep your premises clean. Cut and remove weeds.

FOREIGN

Death-Rate of Manila.—Dr. Victor G. Heiser reports that in March the death-rate among the residents of the city of Manila was 18.97 per thousand, which is the lowest rate reached since the American occupancy, and is probably much lower than any previous rate during the past century.

Health of Government Employees in the Philippines.—Dr. Victor G. Heiser, U.S.P.H.S., Director of Health of the Philippine Islands, reports that during the quarter ended March 31, 1914, the total number of employees of the Philippine government was 9,318, of whom 2,312 were Americans and 7,006 Filipinos, of which there were two deaths among the Americans and ten deaths among Filipinos, the respective death-rate being: American 3.51, and Filipino 5.79.

Souvenir to Venerable Practitioner.—The medical profession of Cuba recently united in tendering a banquet and presenting a souvenir plaque to Dr. Juan B. de Landeta of Havana, on the completion of his fiftieth year of medical practice. The plaque represents an open book with appropriate inscription and decorations. He obtained his medical degree and served as intern in Paris.——The degree of doctor of sciences, honoris causa, has recently been bestowed on Dr. Aristides Agramonte of Havana, by Columbia University, New York, for his works on tropical diseases.

Monument to Carrion.—Daniel A. Carrion, a medical student in Lima, Peru, inoculated himself in 1885 with blood from a verruga tumor in an effort to throw light on the nature of the disease, and he died from it in less than two months. The sixth Pan-American Congress held at Lima last year started a fund for a monument to this young martyr to science, and subscriptions are now being received. The Academia de Medicina of Venezuela recently forwarded over $125 as its contribution. The fund is in charge of the dean of the medical faculty, Prof. E. Odriozola, Lima, Peru. Carrion's work was described recently in The Journal, Nov. 8, 1913, p. 1713.

Banquet Novy.—The Asociacion Medica de Puerto Rico tendered a reception and banquet to Prof. F. G. Novy of the University of Michigan, on his arrival at San Juan July 15, Drs. W. A. Glines and J. S. Belaval being in charge of the affair. This association was not officially represented at the annual meeting of the American Medical Association as no delegates are admitted unless the society has been affiliated with the Association for two years at least, and consequently, as the organ of the Porto Rico Association remarks, for this year they were orphans. At the next meeting they will have an official representation. The son of the editor of the *Boletin* de la Asociacion Medica has just been graduated from the Naval Academy at Annapolis.

CANADA

University News.—Several citizens of Toronto have agreed to contribute various sums amounting to $15,000 for five years to enable the University of Toronto to engage in research work.

Personal.—Dr. Charles T. Ballantyne, Montreal, is spending some months in Glasgow.——Dr. Herbert A. Bruce is returning to Toronto in August after a trip abroad.——Drs. A. Orr Hastings and C. E. Cooper Cole, Toronto, have been in Britain for several months.

Conservation Commission to have Charge of Public Health.—Instead of having or inaugurating a department of health or a national board of health for Canada, it has been definitely decided to have the Canadian Conservation Commission look after all health matters in the Dominion of Canada. On August 1 the first number of a bulletin will be issued to doctors, teachers and others interested in public health work, and will, thereafter, continue to be issued each month. Of 100,000 deaths in Canada last year, it is stated that at least 40,000 were caused by diseases that could have been prevented.

Prevention of Tuberculosis.—At the annual convention of the Canadian Association for the Prevention of Tuberculosis in Halifax July 13, strong pleas for federal governmental aid were made to assist in the campaign against tuberculosis in Canada. The welfare of the child is the most important phase of the warfare. The president's address pointed out that year by year the deaths from tuberculosis in Canada were decreasing, and much praise was given the board of health of Ontario for its work in bringing its exhibits before the people. Lieutenant-Colonel Burland, Montreal, was elected president for the ensuing year. Dr. George D. Porter, Toronto, was reelected secretary.

Hospital News.—For the tuberculosis hospital to be built in Quebec City the sum of neary $5,000 was recently collected by means of a flower sale.——The Winnipeg City Council has made a grant of $15,590 to its General Hospital.——The city of Calgary has granted to its General Hospital $14,000 for current expenses.——The Hugh Waddell Memorial Hospital was formally opened at Canora, Sask., on June 18. Mr. C. R. Graham of Winnipeg contributed the site and Mrs. Waddell of Regina the hospital. It has a capacity of thirty-eight beds.——At New Westminister, B. C., the New Royal Columbian Hospital was formally opened, May 29.——A new wing to cost about $6,000 is to be added to the Chilliwack, B. C., Hospital.——The Ontario government approved the hospital bill of the Western Hospital, Toronto. It was only opposed by two members of the staff. The bill confers on the governors full power to manage the hospital as they deem best; and in future the board will be composed entirely of laymen. Hereafter the hospital staff will have no voice in the management of its affairs, acting merely in a consulting capacity.——Dr. Bain, a graduate of the Western University, London, Ont., has been appointed house surgeon in the Brantford Hospital.——The service of oto-laryngology, Toronto General Hospital, has a vacancy for a house surgeon for eighteen months. Applications should be addressed to Dr. David J. G. Wishart, chief of the service.

LONDON LETTER

London, July 9, 1914.

The Royal Commission on Venereal Diseases

At a recent meeting, evidence was given by Blaschko, honorary secretary of the German Society for Combating Venereal Diseases. He thought that while the figures for venereal diseases in the British army were much higher than in the German, these diseases were probably more prevalent in Germany. This he attributes to better conditions of life in England; at any rate, temptation was far greater in German than in English towns of the same size. The society which he represented was constituted in 1902. Its main objects were: (1) enlightenment of the public on the ravages of venereal diseases; (2) the scientific discussion of means for combating them and (3) keeping in touch with legislative and administrative bodies and proposing reforms. The committee represented all [illegible], insurance companies, physicians, law[illegible] merchants, members of parliament and well-known women. There were branches of the society in nearly all large German towns, and through these the principal part of the work was done. These branches organized public meetings. The society had a large number of wax figures, drawings and lantern-slides which were lent for exhibition. Representations of Brieux's drama, "Les Avariés," had also been organized. In Berlin alone it had been performed more than a hundred times at seven theaters. The society had taken much pains to introduce better sexual legislation at home and in school, but there were many difficulties and prejudices to be surmounted. It had thoroughly changed public opinion on venereal diseases. The whole press and the general public were in sympathy with the movement.

At the last meeting of the Royal Commission on Venereal Diseases, evidence was given by Dr. J. J. Pringle, physician to the skin department of the Middlesex Hospital. He stated that of 36,151 cases of skin disease at the hospital during the last twenty-five years, 1853, or rather over 5 per cent., presented indubitable evidence of syphilis. This figure did not represent the number of patients who had attended the hospital for syphilitic manifestations, but only those who had been referred to the special department as suffering from some affection of the skin. Of these nearly 24 per cent. were foreigners. Dr. Pringle could not see his way to supporting or advocating any measure of compulsory notification of venereal diseases. The medical profession was, he thought, practically unanimously opposed to it, and even if made confidential, its effects on the public would be merely to drive them to seek treatment from unqualified persons. His experience, both in hospital and private practice, convinced him that much of the syphilis existent in England was of foreign importation. A considerable proportion of prostitutes left their own countries because they were unable to ply their trade there and spread disease in this country.

The Family Encyclopaedia of Medicine

The extraordinary circumstances connected with the publication of the Family Encyclopaedia of Medicine have been commented on in a previous letter as well as in an editorial in The Journal (March 2, 1914, p. 1407 and 1414). It may be remembered that this book was issued to the public as representing the views of the most distinguished men in the profession whose names and qualifications were blazoned in the lay press, and even the aid of "sandwich men" who promenaded the West End were used to advertise the project. Indeed, so eminent were the physicians that a cynic said that their disappointment on finding their names brought before the public in this blatant and unprecedented manner was nothing to the disappointment of others who found they had not been included in such a distinguished company! As already stated, the use of their names was unauthorized. They had merely consented to correct the proofs at the request of the physician who edited the work. His explanation was that the publishers in an excess of zeal published the names while he was ill and away from London. He has not, however, given any explanation as to why he communicated a full list of the names and qualifications and appointments of the distinguished men, who in confidence and as a personal favor consented to help him. Some further revelations throw a sinister light on the transaction. Not only was an unauthorized use made of their names, but they were not even told the nature of the work which was being produced. Thus in a letter evoked by strictures in one of the medical journals, Sir Lauder Brunton states that he was requested by the editor to correct some proofs for a work on alcoholism on which this young man, a student at St. Bartholomew's Hospital (to which Sir Lauder is attached), was engaged. Not a word was said about the use to which this production would be put. Under similar circumstances the professor of medicine at one of the leading universities, a writer of world-wide fame, was induced to correct an article on blood-pressure. In another case an equally distinguished professor and well-known teacher on both sides of the Atlantic had paid no attention to the request for help. Nevertheless his name was duly published on the title-page. The first intimation which he had of being concerned in the work was a letter from the Royal College of Physicians inviting him to explain the circumstance.

Syphilis in New Zealand and the South Sea Islands

An important report on this subject has been presented to the Australasian Medical Conference. The reports from 301 physicians show 1,941 fresh infections in the last two years. It is calculated that if all the physicians in the Dominion had replied this number would have been doubled. Two hundred cases of general paralysis have been treated in the New Zealand mental hospitals in a period of ten years. Physicians doing eye work are very insistent on the prevalence of the disease, especially the congenital form. The committee who compiled the report is of opinion that in order to act in unison with the royal commission at present sitting in London, similar commissions should take evidence throughout New Zealand and Australia. They make the following recommendations: 1. Syphilis should be declared a notifiable disease; notification should be discretionary; and the chief health officer should be the only person to whom notification is made. 2. Provision should be made through hospital boards to establish laboratories in the four centers where not already existent for the diagnosis of the disease. 3. Free treatment in the public hospitals and dispensaries should be provided. 4. Steps should be taken to educate the mercantile marine as to the dangers of the disease and provision should be made for preventive treatment on the intercolonial service. 5. Legislation should be enacted against the treatment of the disease by unqualified persons. It is considered that the monetary cost of eradicating the disease would not be very great; in fact, the expenditure would be small in comparison with that resulting from the present wholesale infection of the populace. No form of public expenditure could be so truly described as national and reproductive. If the steps indicated be taken, the results would be diminution of mortality, diminution of insanity, and diminution of expenditure on hospitals and asylums.

PARIS LETTER

Paris, July 3, 1914.

National Conference on Social Hygiene

The meeting of the Alliance d'hygiène sociale, which just took place in Lyons, devoted itself particularly to deciding the rôle which dispensaries should play in the battle against the development of social maladies, which are due principally to alcoholism and insanitary dwellings. It was recognized that, in this battle, the old methods of individual charity were not sufficient: it is necessary to come to the aid of the family. The dispensary, which does a certain amount of work in the home, can be the most appropriate means of this new "sanitary strategy," because it allows the classification of cases and makes possible the immediate and certain sanitation of stricken or threatened neighborhoods. Nevertheless there is difference of opinion in regard to the best type of dispensary. Each one defends the system with which he is most familiar. The dispensaries in France differ decidedly in their organization and work. From an investigation made by Dr. Filassier, chief statistician of Paris, into the forty-six antituberculosis dispensaries which exist in fifteen departments, it appears that all the dispensaries follow a common idea while employing different methods: one gives consultations in winter and organizes vacation colonies or installs a house for open-air treatment for summer; another distributes clothing; another dispenses food; another subsidizes works for infant welfare. It was nevertheless recognized that the dispensary of the "Calmette variety" is that which should be multiplied with the provisos that the different requirements of different places must be taken into consideration, and that an urban and a rural type are necessary. In any case, the dispensary should not supplant the practitioner in undertaking treatment.

It is especially important to find resources for the dispensaries. The majority of those existing, being private, have resources which are entirely insufficient: assessments, benefit fêtes, etc. The principle which was put into practice in Lyons by Arloing and Courmont seems capable of giving better results. This principle is to have an arrangement with the municipality and the bureau of charity, to prove that the tuberculous make a considerable proportion of all the invalids who are aided, and to ask that a part of the allowance used for the care of the sick and indigent be set aside for the tuberculous sick and indigent; in other words, not to add to the budget for relief, but to subtract certain sums which shall be used for the relief of tuberculous persons in their homes; in a word, to divide the municipal budget into general expenses and special expenses for the tuberculous. With a budget of 35,000 francs ($7,000)—of which 17,000 francs ($3,400) is furnished by the city and 10,000 francs ($2,000) by the bureau of charities—the dispensary at Lyons gave astonishing results: before its establishment, the mortality from tuberculosis in Lyons was more than 35.4 per ten thousand; but in 1911 it was not more than 26.1, or a gain of 9.3, a diminution of more than a fourth.

Personal

At its session, June 30, the Académie de médecine elected Dr. Marfan, professor of therapeutics at the Faculté de médecine de Paris, as an honorary member. Bernard-Antoine Marfan is best known as a specialist in diseases of children. He has written on the digestive disturbances of infants, on artificial feeding, and on the relation between rachitis and infections, notably syphilitic and tuberculous infections.

Honor to Dr. Koeberlé

An international committee has just been formed to commemorate, by a bronze medallion to be placed on the walls of the city hospital of Strassburg, the fiftieth anniversary of the first successful ovariotomy, in Europe, which was performed by Dr. Koeberlé (THE JOURNAL, Sept. 7, 1912, p. 814).

Child Welfare at the Museum of Hygiene

At the reunion which just took place under the presidency of Dr. Roux, director of the Institute Pasteur, the commission on improvements of the Musée d'hygiène approved the propositions which were submitted to them by the guardian of the museum concerning the opening of a hall reserved for child culture. A series of comprehensive pictures will instruct the mothers of families in the bringing up of the infant.

Infant Mortality and Alcoholism

M. Paul Juillerat, member of the Conseil d'hygiène et de salubrité of the department of the Seine, and Dr. A. Filassier, chief statistician of the city of Paris, have just published, in the *Revue philanthropique*, the result of researches which they have made into the causes of infant mortality in Paris. This article shows, concisely, the ravages of alcoholism. In the period of ten years from 1903 to 1912 inclusive, of 97,885 children who died, 53,619, almost half, were children under 11 months old. Congenital debility is responsible for 12,342 of these deaths. However difficult it may be in the present state of statistics to place the cause with absolute certainty in these matters, Juillerat and Filassier do not hesitate to say that this enormous proportion must be attributed to alcoholism in the parents of the congenitally debilitated children. Dr. Jacquet's statistics are particularly instructive in this respect. In the investigation which he made from May 1, 1912, to May 1, 1913, at the hôpital Saint-Antoine, he divided the 396 patients whom he examined into three classes, with a total of 879 children: alcoholism in moderation (those who drink a liter of wine, alcohol or, rarely, aperients); decided alcoholism (those who drink habitually from 1.5 to 2 liters of wine, alcohol or absinthes rather frequently), and very decided alcoholism (those who drink habitually 2 liters of wine or more, aperients, alcohol, occasional repeated absinthes).

MORTALITY AMONG THE CHILDREN OF ALCOHOLICS

Alcoholic Consumption		Births	Deaths	Per Cent.
Moderate	141	305	83	18.78
Decided	108	248	115	26.01
Very decided	147	326	244	55.47
	396	879	442	....

Of these 442 dead children, 272 succumbed in early infancy. Thus, the children of these 396 patients, all addicted to alcohol to a greater or less degree, gave a round mortality of 50.28 per cent.

Juillerat and Filassier then show that in different domains, medical and social foresight have noticeably diminished the infant mortality. This is the case with diphtheria, pulmonary tuberculosis, tuberculous meningitis, syphilis, diarrhea, etc. In contrast to this, so far as congenital debility is concerned —which furnishes so considerable a contingent to this mournful record—there has been almost no amelioration.

BERLIN LETTER

BERLIN, July 4, 1914.

Personal

Gärtner, director of the Hygienic Institute at Jena, and v. Hippel, director of the eye clinic at Göttingen, resigned their positions at the end of the summer semester. Hippel is to be succeeded by his son, v. Hippel of Halle.

October 1, Sander and Moeli also resign their positions as directors of the Berlin insane asylums at Dalldorf and Herzberg on account of age. Both are authorities in psychiatry and have done very good service both in scientific advancement of psychiatry and in the organization of the care for the insane. Moeli was also for many years a member of the Prussian government board for insanity.

Annual Meeting of the Organized Profession in Germany

The German Aerzte-Verein and the Leipsic League held their meeting for this year in Munich, June 25-27. Altogether about 26,000 physicians were represented by delegates, amounting to about three-fourths of the physicians of Germany.

In the meeting of the Leipsic League, the chief interest was felt in the report of the president, Hartmann of Leipsic, on the so-called Berlin agreement, that is, the contract which was made last December, under the auspices of the government, between the Leipsic League and the insurance societies. Hartmann took the pains to answer the criticisms which had been made by a number of physicians in regard to the result of the contract. He emphasized the important fact that, in the long run a profession, like that of medicine, is not adapted for battle and that an organization which is made only for the sake of strife has no justification for existence. I will omit the details of his report and the discussion as the questions involved have not come up in America.

Hartmann admitted that not all of the demands of the German profession had been secured in the conclusion of peace, but in his opinion, the essential end had been reached.

GRATUITOUS MEDICAL SERVICES

Aside from the address of Hartmann, Lennhoff of Berlin discussed the question of the extent to which physicians should render free service in so-called philanthropic undertakings. In the previous year, the proposal was made by a Leipsic society to limit considerably gratuitous medical service but this proposal met with marked opposition from many physicians' societies and particularly from the public. On the basis of his extensive collection of data, Lennhoff proposed the following conclusions which were also approved by the board of the German Aerzte-Vereins-Bund and were adopted by the meeting by an almost unanimous vote:

1. Free medical service for charity is an honorable duty of the German medical profession but it needs to be protected against abuse. 2. The fact that an undertaking is designated as "philanthropic" (*gemeinnützig*) does not in itself necessitate gratuitous medical service. 3. A general prerequisite for this is that the object of the undertaking does not fall in the sphere of official duty (*nicht in den Bereich behördlicher Leistungen*) and that the undertaking itself is carried on without gain or only a slight one. 4. In individual cases, the gratuitous service should depend on the peculiarity of the medical service. 5. A special service requiring no pay may be assumed in the instruction of societies of voluntary nurses in war and in health colonies and assistants of the Red Cross. 6. Wherever physicians furnish free service for instruction a written statement should be obtained from the bureau which gives the commission and from the persons to be instructed that this shall not involve any kind of medical service.

7. All questions as to whether medical service should be rendered free for a philanthropic undertaking, should be referred to the local organization of physicians. An appeal can be made from the decision of this body to the business committee of the German Aerzte-Vereins-Bund.

ANTIQUACKERY CAMPAIGN

Another important resolution of the Aerzte-Tag was that the campaign against quacks, whose number is continually increasing in Germany, should be carried on with increased vigor. For this purpose the commission appointed by the Aerzte-Vereins-Bund is to be enlarged and to be provided with larger funds. In order to secure the latter, the fee from each member of the Aerzte-Vereins-Bund was raised 1 mark. An appropriation of $6,250 (25,000 marks) was made for the commission. Finally the question of the improvement of the midwife system was thoroughly discussed.

Marriages

Benjamin Merrill Ricketts, M.D., Cincinnati, to Mrs. Bertha W. Davidson of St. Paul, Minn., at Cincinnati, June 17.

Edward Maples Steger, M.D., Winnebago, Wis., to Miss Agnes Johnson of Lansing, Mich., at Oshkosh, Wis., July 6.

Paul Henry Anthony, M.D., Morris, Ill., to Miss Mary Gwendolyn Fitzgerald of Rogers Park, Chicago, June 30.

Louis Clifton Kuyrkendall, M.D., McAlester, Okla., to Miss Ione Williamson of Durant, Okla., July 1.

Arthur E. Wade, M.D., Lexington, Neb., to Miss Clara Esther Danielson of Tacoma, Wash., June 16.

Harold Le Roy Avery, M.D., Primghar, Ia., to Miss Lydia Fenner of Independence, Ia., June 30.

Axel Emanuel Hedback, M.D., to Miss Gladys Margaret 'ebb, both of Minneapolis, July 2.

Leonard George Rowntree, M.D., to Miss Katherine Marie Campbell, both of Baltimore, July 9.

Earl Hobart McRae, M.D., New York City, to Miss Helen Ray Kitchen of Easton, Pa., July 6.

Deaths

George Whitten Magee, M.D. Western Pennsylvania Medical College, Pittsburgh, 1889; a Fellow of the American Medical Association; for two terms a member of the Pennsylvania Legislature; for twelve years a member of the school board of Oil City, Pa., and for three terms its President; a member of the Board of Directors of the State Institute for the Feeble-Minded, Polk, Pa.; a member of the Medical Staff of Oil City Hospital; died suddenly at his home in Oil City, July 3, from heart disease, aged 49.

Rufus C. Webb, M.D. Vanderbilt University, Nashville, Tenn., 1883; for twelve years Coroner of Acadia Parish, La.; president of the police jury of the parish; for twenty years a member of the common council of Rayne; formerly a member of both houses of the legislature; president of the Rayne Board of Health and director of the Commercial Bank of Rayne and the Commercial Bank of Church Point, La.; died in the Touro Infirmary, New Orleans, July 5, from nephritis, aged 52.

Carl Matthey, M.D. University of Zurich, Switzerland, 1880; a member of the Iowa State Medical Society; for more than thirty years a practitioner of Davenport, Ia.; a member of the Staff of St. Luke's and Mercy hospitals, Davenport; for six years a member of the Davenport School Board; died at his home, July 8, from embolism, aged 61.

Sumner Ferdinand Quimby, M.D. New York University, New York City, 1881; a Fellow of the American Medical Association and a member of the staff of the Addison Gilbert Hospital, Gloucester, Mass.; medical examiner for the Cape Ann district for more than thirty years; died at his home in Gloucester, July 10, from cerebral hemorrhage, aged 62.

George Barr Scholl, M.D. Johns Hopkins University, Baltimore, Md., 1902; a Fellow of the American Medical Association and professor of pathology, bacteriology and clinical microscopy in Baltimore Medical College; who was taken ill while visiting at Drum Point, Md.; died on a steamboat on Chesapeake Bay, July 9, from spinal meningitis, aged 39.

Charles Bigelow Braman, M.D. University of Buffalo, N. Y., 1898; a member of the Medical Society of the State of New York; formerly a practitioner of Rochester, N. Y., but for the last ten years in charge of the pharmacy of the Clifton Springs Sanatorium; died at his home in Clifton Springs, July 4, aged 53.

George Harvey Lee, M.D. Bennett Medical College, Chicago, 1883; of Kankakee, Ill.; a member of the Illinois State Medical Society; president of the Kankakee County Medical Society; died in the Emergency Hospital in Kankakee, July 8, from septicemia, due to a splinter wound of the finger, aged 54.

Edmund Quandt, M.D. Detroit, Mich., College of Medicine, 1902; for four years a city physician of Detroit and for the last two years county physician of Wayne County; died at his home in Detroit, July 5, from tuberculosis; aged 34.

Merrill L. Eidson, M.D. Missouri Medical College, St. Louis, 1885; formerly a practitioner of Beeville, Texas; but for the last five years a resident of San Antonio, Texas; died at his home in San Antonio, July 2, from the effects of skull fracture received in a fall the day before, aged 54.

Samuel Claggett, M.D. University of Maryland, Baltimore, 1898; a Fellow of the American Medical Association; local surgeon at Petersville, Md., for the Baltimore and Ohio System; died in the Maryland University Hospital, Baltimore, July 9, from acute disease of the kidney, aged 41.

George W. Seifert, M.D. Jefferson Medical College, 1883; a member of the Medical Society of the State of California; a prominent and wealthy practitioner of San Jose, Cal.; died in the Palace Hotel, San Francisco, July 2, from acute dilatation of the heart, aged 54.

William H. Willis, M.D. Missouri Medical College, St. Louis, 1881; a Fellow of the American Medical Association; a member of the staff of the Proctor Hospital, Peoria, Ill.; died suddenly at the base-ball park in that city, July 4, from angina pectoris, aged 54.

Henry W. Grauel, M.D. Eclectic Medical Institute, Cincinnati, 1875; of Painsville, Ohio; a member of the Ohio State Medical Association; died at the summer cottage of his son at Linden Beach, Ohio, July 3, from heart disease, aged 66.

Robert T. Miller, M.D. Washington University, St. Louis, 18[illegible]0; said to have been the first practitioner of Sedalia, Mo., and once mayor of that city; died at the home of his daughter in Jefferson City, Mo., June 11, aged 86.

John Andrew Lee, M.D. Vanderbilt University, Nashville, Tenn., 1887; of Pine Hill, Ala.; a member of the Medical Association of the State of Alabama; died in a hospital in Birmingham, May 29, aged 50.

Dean Samuel Ellis, M.D. Jefferson Medical College, 1883; a Fellow of the American Medical Association; for thirty years a practitioner of Worcester, Mass.; died at his home in that city, June 30, aged 58.

Milton Ira Beeman, M.D. University of Toronto, Ont., 1873; for some time major of the Forty-Seventh Battalion; died at his home in Newburg, Ont., May 10, from cerebral hemorrhage, aged 62.

Milton Isaac Brosius, M.D. Cincinnati Medical College, about 1847; one of the oldest practitioners of Seneca County, Ohio; died at his home near Tiffin, June 9, from senile debility, aged 90.

Barnard H. Gallegher, M.D. Memphis Hospital Medical College, Memphis, Tenn., 1891; a member of the Arkansas Medical Society; died at his home in Pine Bluff, Ark., June 27, aged 51.

Napoleon B. Morrison, M.D. Jefferson Medical College, 1857; a surgeon in the Federal service during the Civil War; died at his home in Wilmington, Del., June 26, aged 80.

Scy W. Ewell, M.D. Kentucky School of Medicine, Louisville, 1882; for many years a practitioner of Bogard, Mo.; died at his home in Carrollton, Mo., June 25, aged 58.

Frederick William Denkewalter, M.D. Rush Medical College, 1874; was found dead in his sanitarium in Spencer, Ind., June 28, from valvular heart disease, aged 71.

Walter E. Truax, (license, Minn., 1883, and California) formerly a practitioner of Breckenridge, Minn., died at his home in East San Diego, Cal., June 19, aged 66.

John Lawrence Hummel, M.D. Louisville, Ky. Medical College, 1893, of Louisville; died in the Louisville City Hospital, June 24, from heart disease, aged 40.

Isaac C. Hazlett, M.D. University of Pennsylvania, Philadelphia, 1870; died at his home in California, Pa., June 29, from cerebral hemorrhage, aged 74.

James A. Barnes, M.D. Medical College of Ohio, Cincinnati, 1875; a veteran of the Civil War; died at his home in Perrysville, Ind., June 21, aged 69.

Edward K. Harding, M.D. Louisville, Ky. Medical College, 1877; died at his home in Carterton, Va., April 7, from cerebral hemorrhage, aged 66.

John Henry Thieman, Jr., M.D. University of Louisville, Ky., 1902; died at his home in Louisville, June 9, from tuberculosis, aged 36.

George W. Hurlburt, M.D. McGill University, Montreal, 1869; died at his home in Thornbury, Ont., May 12, aged 77.

W. J. Trott, (license, Tenn., 1889), died at his home in Raus, Tenn., June 28, from heat exhaustion, aged 53.

The Propaganda for Reform

In This Department Appear Reports of the Council on Pharmacy and Chemistry and of the Association Laboratory, Together with Other Matter Tending to Aid Intelligent Prescribing and to Oppose Medical Fraud on the Public and on the Profession

CAN NEBRASKA EDITORS BE BLUFFED?

Buck and Loffler, Itinerant "Specialists," try to Intimidate a Newspaper

Frederick Wellington Buck and Gilbert Dennis Loffler has each brought suit for $25,000 against the editor and publisher of the *Ord Weekly Journal.* The *Ord Weekly Journal* is the official county and city paper for the city of Ord, Valley County, Nebraska. Its editor and publisher is Mr. Horace M. Davis. Mr. Davis, in the line of his editorial duties, had occasion to call the attention of the Valley County public to the fact that it had in its midst Drs. Buck and Loffler the Quaker Indian Specialists of Denver. Mr. Davis said some other things about these two individuals, and the result is the filing of suits aggregating $50,000, against him. That these suits will ever come to trial no one concerned in them believes. They have been brought, doubtless for the main purpose of intimidating other editors of country newspapers and making them hesitate to turn the cold, cruel light of publicity on the peripatetic Buck-Loffler combination.

Gilbert Dennis Loffler (who sometimes signs himself Gilbert D. Loffler and at other times G. Dennis Loffler) is, according to our records, a graduate of Barnes Medical College, St. Louis, 1901. In the same year he received a license to practice in South Dakota. We find no record of his being licensed to practice in any other state. For some years previous to 1908 Loffler was located at Yankton, S. Dak. According to those living in the locality Loffler made a business of going through the country soliciting work from farmers. One alleged scheme was that of sending out an advance-agent under the guise of a horse-buyer, who, by careful questioning, would discover who was ailing in the homes of prospective victims. Soon after, Loffler is said to have appeared on the scene and astonished the people by his wonderful diagnostic ability. He would then, it is said, promise a cure in consideration of a note given for a certain number of months' "treatment." These notes, it is alleged, were immediately sold to bankers at a liberal discount.

After leaving Yankton, for reasons not necessary to go into at this time, Loffler went to Sioux Falls, S. Dak., where he is said to have been interested, first in a "medical institute," and later in an "Intravenous Therapy" scheme. From Sioux Falls he seems to have gone to Minneapolis and later to have drifted to Chicago, where he now lives. According to one Loffler letterhead, he has his "laboratory" at 22 Quincy Street, Chicago. It may or may not be a coincidence that this is also the address of the Accuracy Public Service Company, a concern which offers its services to quacks and purports to be able to secure evidence against reputable physicians. This was referred to in this department of The Journal, Feb. 28, 1914.

To indicate the scientific standing of Loffler, we quote, from a letter written by him some months ago, to a prospective victim; spelling and composition original with Loffler:

> "The treatment consists of injecting a chemical into the blood stream by way of a vein in the arm and which causes no disturbance of any kind.
>
> "The Chemical improves the Hemoglobine of the blood to normal and positively corrects the Density in which the patient can truthfully understand the possibilities of recovering strength and health.
>
> "I wish, however, for you to first understand that we cannot perform miricles, we cannot hope to bring about good results in those cases that come to us without a foundation to build upon, but in the first and second stages of Tuberculosis and in all cases of Anaemia, stomach disturbances, Nervous disorders etc. we have a positive remedy and wish you to fully investigate it for your own good as well as your friends."

So much for Loffler. Frederick Wellington Buck before he found a lush field for the exercise of his peculiar qualities in the Dakotas, Nebraska and Colorado, used to live in Grand Rapids, Mich. According to the Michigan State Board of Registration, Buck went through a form of registration in Michigan in 1898 as a "graduate" of the Independent Medical College of Chicago. The Independent Medical College, as many of our readers will remember, was a fraudulent mail-order "diploma mill" which sold "diplomas" to any one who sent the cash. It was finally put out of business by the federal authorities.

When the Michigan medical act of 1899 came into force Buck applied for re-registration under this act, but the Michigan State Board of Registration refused to re-register him. At that time Buck was secretary of a concern calling itself the West Michigan Association of Physicians and Surgeons, an organization said to have been composed largely of men whose medical (?) qualifications were similar to those possessed by Buck. This "association" was behind a mandamus suit brought by two men, Metcalf and Reetz, to force the Board of Registration to register these men even though they had no proper qualifications. Both the cases went to the Michigan Supreme Court and were thrown out. The Reetz case was carried to the United States Supreme Court which upheld the constitutionality of the Michigan medical act and also the action of the Board in refusing to register applicants who were without proper qualifications.

Shortly after the Reetz case was decided, Buck found it advisable to leave Michigan. Although the medical directories for 1902 give Buck's address as Muskegon, Mich., Buck claims to have graduated from Central Medical College at St. Joseph, Mo., in 1902. According to the Central Medical College records, Buck gave Lepanto, Ark., as his home address. How Buck was able to be graduated in 1902 is a mystery, as he left Michigan at about the same date and at that time, according to the State Board of Registration, had absolutely no qualifications involving attendance at a reputable medical college.

In 1904 and 1906, Buck's name appears in the directory under Aberdeen, S. Dak. Various newspapers, during the winter of 1910-1911, contain advertisements published in news-item form telling of the "promotion" of Dr. Frederick Wellington Buck. The items state that Dr. Buck "has just been elected President of the Affiliated Offices of the Quaker Indian Medical Institutes with a salary of $10,000 a year." Buck's "promotion," according to the "news-items," was due "to his faithful record of six years' work in Nebraska without signing a single death certificate." The advertisements state further that "Dr. Buck will continue his office at Flagler, Colo., and will continue making his regular visits here every sixty days until next spring, when he will take personal charge of the Omaha or Denver office with two assistants. . . ." According to our records, Buck is not licensed to practice in any state except Nebraska, where he obtained his license in 1903.

This, then, is the brace of worthies that attempts to intimidate the editor of a country newspaper because he endeavors to protect his readers by directing attention to the character of these two itinerants. Fortunately, Mr. Horace M. Davis, editor and publisher of the *Ord Weekly Journal,* is being supported by the decent element in his locality. The Valley County Medical Society meeting at Ord, June 2, passed resolutions sustaining Mr. Davis in these words:

> "*Be it Resolved,* that the members of the Valley County Medical Society assure Mr. Davis, the editor of the *Ord Journal,* their moral support and encouragement in his controversy and lawsuit with the alleged representatives of the Quaker Indian Specialists and that the society highly commends Mr. Davis and all other editors and publishers of their effort to awaken the public to the dangers of patronizing and placing their lives in the hands of medical practitioners whose professional reputation is questionable."

This resolution has also been officially endorsed by the Nebraska State Medical Association. It now only remains to be seen whether the impudent bluff of Buck and Loffler will cause other country newspapers to refrain from criticizing these men. It is unquestionably true that if the country papers do their duty they can make Nebraska so hot for both quacks and itinerant "specialists" that Buck and Loffler will give that state a wide berth.

FIGHTING FAKERY IN IOWA

State Board of Health Will Use Exhibit Cards Prepared by the Association

"The state of Iowa is going to fight fake medicine cures and quackery. The fight will not be carried on through the courts. It will not be taken before the legislature for additional legislation.

"Through the board of health, the state is going before the thousands of people who visit the state fair this year and call a spade a spade. Medicines and cures that have been branded by the American Medical Association as fakes will be named. Their advertisements will be exhibited. Their results will be pictured. Their effects on the life and health of their users will also be told.

"The women's building at the state fair will be 'plastered' with great placards denouncing various cures. Every woman who enters the building cannot help but see them. One placard in particular will show the testimonials of four persons. The testimonials declare the writers thereof were cured of consumption by various 'cures.' Right below the testimonials will appear the obituaries of the four and their cause of death, tuberculosis. Clippings from newspapers showing deaths from various kinds of headache powders and 'wonderful cures' will be reproduced on other placards.

"It is the first time, according to Dr. Sumner, that the state of Iowa has campaigned against fake medicines and quackery. Some of the placards have already been printed and received."—Des Moines (Iowa) *Capital.*

PROPRIETARY THERAPEUTICS

Le Mars, Iowa, is Put in the Vanguard of Progress

The methods by which proprietary manufacturers have attempted to teach physicians the science of therapeutics, are notorious. Those that have viewed this movement with disgust and discouragement will be interested in the following news item from the Le Mars (Iowa) *Sentinel* of recent date:

"Dr. .... returned Monday from Detroit, Mich., where he went as one of a class of one hundred doctors selected from all over the United States, to take a course in the large Medical Research Laboratory located there. The lectures and demonstrations were given by Parke Davis & Co.'s staff of scientific medical research workers. All the latest discoveries in the cause and cure of diseases were here given to the visiting doctors long before they get to the medical profession at large."

Correspondence

Mauriceau's Seventeenth Century Treatise

To the Editor:—On "Round Prairie," 4 miles east of the village of Oconee in Shelby County, Ill., stands a fine old country residence that was built a number of years before the Civil War. It was for a time owned by Dr. W. T. Linn, who came from Ohio in 1844, served as private, hospital steward and in the medical director's office (at Detroit) during the war, and is yet living at the age of 99, having been a physician for seventy-five years.

In remodeling the old house last year, the present owner, Mr. Tony Hinton, found within its walls some letters, written to daughters of Dr. Linn (who was father of twelve children) fifty and sixty years ago. With them was found a mutilated copy of a work on obstetrics and diseases of women and the new-born that is evidently 246 years old. Mr. Hinton, who is related to my wife, kindly gave the book to me.

It is without cover or title-page and only enough of the introduction remains as to disclose the initials of the author —F. M.— in italic capitals. The body of the work is complete as far as page 352, the missing pages from the latter portion of the work carrying a part of Chapter XXXII. "Of the Scabs that are on the Head and Face of Children." There is nothing to indicate how many subsequent pages the book contained.

The type is of the Elzevir style, with bold hair-lines and short serifs, the lower case s being like f excepting that it has not the cross mark. There are a number of excellent engravings bearing the inscription, "Holmes Sculp."

On page 8, dealing with barrenness, the author notes that some finally conceive after being many years in wedlock: "Of which we have had a remarkable example in the person of the Queen mother, lately deceased, who was above twenty years married, and without children, and yet afterwards, to the great joy and content of all France she had our invincible Monarch Lewis XIVth, now reigning." (Anne of Austria died in 1666. She bore Louis XIV when 37 years old.)

This one extract alone enables us to identify the author, "F. M.," as François Mauriceau, since Roswell Park, in his "Epitome of the History of Medicine," states that this author "in 1668 published his Treatise on Diseases of Pregnancy and Childbirth, which was translated into all the languages of Europe." He was chief *accoucheur to the Hôtel-Dieu* in Paris.

The English translation is evidently by one of the Chamberlains, since at the beginning of Chapter XII, "The Signs to know whether the Child be alive or dead," occurs the following: "If there be any case, wherein a Chirurgeon ought to make the greatest reflection, and use most precaution in his art, it is this, *to know whether the infant in the womb be alive or dead," etc. And in a marginal note, printed in italics: "**This is not so necessary to those practitioners which can fetch a child coming right, or with the arm, without hooks or sharp instruments, as the translator of this book, and his father and brother can.*"

It will be recalled that Park (*loc. cit.*), page 166 also says: "About this time the Chamberlains, an English family devoted to the practice of midwifery, invented an instrument to facilitate the extraction of the foetal head when arrested, and one of them went to Paris, and, failing of success there, went on to Holland, where he sold his secret to two Dutch practitioners, who kept it only too faithfully."

While the work contains much sound reasoning in matters of pure mechanical detail, reminding one of Marion Sims in this respect, it abounds in quotations from the works of Hippocrates and Galen.

Certainly the therapeutics of those days would now be considered barbarous, and if carried out to-day would bring down on us the antivivisectionists and the Humane Society. Even the Christian Scientists would marvel at the number of difficulties that were in those days left to the beneficent hand of the Almighty.

Our author, however, mentions much of it in order to condemn it. Thus on page 249: "We'll now pass to convenient remedies for the belly of a new-laid woman. . . . All authors do appoint immediately after delivery, the skin of a black sheep, flea'd alive, for this purpose, to be laid all over her belly, and to lie on four or five hours; others will have a hare skin. . . . Truly, I believe that by the natural heat of such skins, the remedy is not bad; but I also fear lest in some small time after it may do more hurt than good, and that by its moistness, cooling of her, it may make her chill, which would be very prejudicial in stopping her cleansings, which ought to flow. . . . Besides it is a remedy of too much trouble; for there must always be a butcher ready for every woman that is laid, or some other person who can do it as readily, who must be for this purpose in the very chamber, or at least in the house, so that he have the skin very hot, according to directions."

And in the next succeeding paragraph: "They likewise direct a small plaister of *Galbanum*, with a little Civet in the middle, to be applied to the woman's navel, which as they imagine, is very proper to keep the womb in its place, because being delighted with that smell, it draws near to it of itself" (thus obviating the necessity of modern surgical intervention for suspension of the uterus). He sagely concludes, however, that "this remedy is a little *superstitious*; wherefore I am not for it, it being sufficient to keep the belly very warm, in the situation we have directed, and to prevent the least cold."

He recites at length, the story told by Averroes, of the woman "who conceived in a bath wherein a man had washed himself a little before. . . . But this is a story fit to amuse little children," is his wise conclusion.

Chapter XXII treats of "The venereal Disease in Women with Child." He insists on active mercurial treatment by inunctions, purgations and salivation, in those cases "where the woman hath the *Pox* in the highest degree"; and cites cases in which they have gone through this treatment and been delivered of a healthy child at full time.

The author argues ably against the belief in maternal impressions, and yet the persistency with which medieval credulity still survives—in this one instance at least—may be attested by every practitioner in this country.

When it is recalled that the obstetric forceps was not introduced to the world until 1721, by Palfyn of Ghent, and that Sir James Simpson did not introduce chloroform anesthesia for women in labor until 1847, with Lord Lister's epochal labors beginning about thirty years later yet, the tragic occurrences of the lying-in chamber in those olden times must be something awful to contemplate at the present time. Indeed, the technic then employed would be amusing, if we could eliminate the tragic. Thus on page 193: "There are some women whose children (notwithstanding they come right) remain sometimes four, five or six whole days in the passage, and would continue there longer, if they were left alone, without being able to be born, unless assisted by art" (?).

Then follows a lengthy description of craniotomy, so commonly resorted to at that time. He then concludes with the statement that "for my part I had rather do this in the like occasion than resolve on that cruelty and barbarousness of the Caesaerian Section, in which tis absolutely impossible ('tho many imposters, whom Rousset favors, assure the contrary) that a woman should ever escape."

In Chapter XIII, "How to Fetch the After-Burthen when the String is Broke," the author relates that he was once called to a poor woman in the Fauxbourgh St. Marcel three days after her delivery by a midwife, where he found her in "continual pain all over her belly, which held her like Throws of another Travail, voiding black humors extremely stinking and offensive, with which she also had a great pain in her head, and a fever, which in a short time would have augmented, if I had not presently fetched what remained." The midwife had left the placenta *in situ*, stating that it would come away of itself. (Apparently the professional ethics of many midwives has not undergone much revision to this day.)

After describing the removal of the retained placenta, the author observes: "She immediately after felt no more pain, and recovered soon after: but otherwise she had certainly been in danger of her life, because of the great corruption of what was left behind in the womb: for that which I fetched away smelt so ill, that my hands stank of it above two days after, although I washed them three or four times with vinegar."

(Unfortunately he does not give his mortality statistics for the series of cases immediately following, and doubtless could not have been led to believe that they bore any connection.)

Thus in Chapter X, "The causes of the Stoppage of the *Lochia* proceed either from a great looseness of the bowels because a great evacuation that way turns the *Lochia* and makes them stop; or any strong passions of the mind, as great fear or grief, or any anger or swoonings, for these things do cause the Humors to retire suddenly inwards, and by this quick motion they often cause suffocations. . . . Great colds stop the *Lochia*, because it closes the vessels and pores of the womb: the use of astringent remedies produces the same effect, as also cold drink; because by condensing and thickening the Humors, they hinder their easy flowing."

I should like to learn where a perfect copy of this work might be found.

J. P. Simpson, M.D., Palmer, Ill.

[The foregoing letter was submitted to Dr. Fielding H. Garrison, of the Surgeon-General's Library, who in reply says:]

"I find that the book described by your correspondent is in all probability one of the several editions of Hugh Chamberlen's English translations of Mauriceau published in the eighteenth century. This library has four of these, viz., 1718, 1727, 1752, 1755, the last being according to the biographers of Chamberlen the last English edition published. Each one of these corresponds with the description given by Dr. Simpson and he could no doubt find some one of them at least in such a collection as the John Crerar. There are also two earlier seventeenth century editions of this translation (1673, 1697) but these do not correspond with the description given, so it must refer to one of the eighteenth century imprints. The 1673 was the earliest to be published."

International Anti-Alcoholic Congress

To the Editor:—As the International Anti-Alcoholic Congress meets in this country next year, it may be interesting to know something of its origin. It was organized in Antwerp in 1885 by a group of teachers and doctors, who met to discuss the subject as a sociologic one. Two years later the second congress was held at Zurich, Switzerland, under the presidency of Forel, at which time the real organization took place. Its central object was to discuss the alcoholic problem in its racial, national, hygienic and sociologic aspects. No theories were to be endorsed by the congress or special plans for relief. It was to be a study and accumulation of the facts, regardless of what they indicated. From that time the congress has been held every two years, in different cities of Europe, and has gradually increased and become more and more authoritative, attracting the attention of sociologists and students of the great problems of race development.

In 1907 the Swedish government gave the congress a national character by appropriating money and assuming the responsibility of inviting the different nations of the world to send officially appointed delegates. This resulted in a very enthusiastic gathering of nearly 2,000 persons at Stockholm, and a representation from more than twenty governments of the world. The crown prince presided and leading officials of the government took active parts.

In 1909 the British government assumed the same responsibility, inviting delegates from all over the world officially to the congress at London. The Lord Chief Justice and home government were represented and a large number of distinguished medical men took a very active part.

The next congress, in 1911, was held under the auspices of the Holland government and took place at The Hague. Thirty-one governments sent officially appointed delegates, and over 2,000 persons, including many leading men of Europe, participated in a five days' session in which many most interesting papers were presented and discussed.

The Italian government sent a warm invitation to meet at Milan in 1913, and this was attended by an equally large number of distinguished persons, and the large volume of transactions indicates the magnitude of their work.

Our government sent an invitation to hold the next meeting here, and this was accepted, and will be held at Washington July, 1915. The government has already appropriated a large sum of money, and a committee is now engaged in perfecting the organization.

T. D. Crothers, M.D., Hartford, Conn.

Passing of a Type of General Practitioner.—It is perfectly true that a certain type of general practitioner is passing. The man who does an incredibly large amount of work in a slipshod manner cannot stem the tide of progression; he is being supplanted by a new type of general practitioner, by a better-trained man, who does his general work in a careful, deliberate, skilful and an adequate manner.—President's Address by Dr. James R. Carroll, Western Tennessee Med. and Surg. Assn.

Queries and Minor Notes

Anonymous Communications and queries on postal cards will not be noticed. Every letter must contain the writer's name and address, but these will be omitted, on request.

POHL'S METHOD FOR REMOVING THE BLOOD

To the Editor:—Kindly refer me to Pohl's article regarding the complete removal of blood from various organs for biologic experimentation, as mentioned by you editorially commenting on Fischer's theory of nephritis, The Journal, June 20, 1914, p. 1971.

M. H. Kaiden, M.D., New York.

Answer.—Pohl's method is described in Abderhalden's "Handbuch der biochemischen Arbeitsmethoden" under the title "Das Arbeiten mit dem Organeiweiss." He obtains from the various organs material which he calls organ plasma. The organ plasma must be entirely free from blood. It is best obtained from organs with easily prepared afferent vessels such as the liver, kidney, spleen, etc. The liver is washed out in a reversed direction from the vena cava with an 0.8 per cent. solution of the purest sodium chlorid entirely free from calcium, and the washing out is continued until the wash-water flows away entirely colorless. For qualitative purposes it is sufficient to mince the blood-free organs, mix with the proper amount of physiologic salt solution with the addition of toluene or benzene, shake thoroughly, let stand in the cold for twenty-four hours and filter, pouring back the first part of the filtrate until it comes through clear. The filtrate resembles blood-serum. Even from a liver that contains glycogen a bright yellow filtrate will at last be obtained. For quantitative purposes when time for work is lacking, the organ emulsion can be rapidly dried and preserved, but it is best to work with fresh solutions.

FRAGMENTATION OF TUBERCLE BACILLI

To the Editor:—Is there any diagnostic significance in finding on examining a specimen of sputum microscopically that the tubercle bacilli are broken into small segments? Specimens from the same patient have been examined from time to time, and without exception all bacilli seen on the slide in question were segmented, while specimens from other patients examined at the same time under exactly the same conditions did not show segmentation.

F. J. Reid, M.D., Deming, N. Mex.

Answer.—The broken or splintered condition of tubercle bacilli has no diagnostic significance. The fragments, if really fragments of bacilli, are of the same diagnostic value as the whole bacilli. Opinions are much divided as to the significance of fragmentation with reference to prognosis. As a rule, however, authorities have admitted that no certain conclusions can be drawn from the form of the bacilli. Some, however, believe that the predominance of fragments indicates a relatively favorable prognosis.

TYPHOID SERUMS AND TEMPERATURE

To the Editor:—Have the typhoid serums of the present day any effect on fever? That is, will they shorten its course in any way like the diphtheria antitoxin, or is the old routine treatment of typhoid the better course to pursue? I have read literature for and against its use except as a prophylaxis. In other words, will its use lessen the severity of the disease?

W. S. Campbell, M.D., Albany, Mo.

Answer.—A distinction must be made between typhoid serums and typhoid vaccines. Typhoid serums have been recommended for the treatment of typhoid fever, but there is no consensus of opinion as to their value. The typhoid vaccine has been used in treatment by a number of clinicians who assert that it renders the course of the disease milder. It must be regarded, however, as still in the experimental stage.

VACCINES AND SERUMS IN HAY-FEVER

To the Editor:—Please give me the status of vaccines and serums in the treatment of hay-fever.

G. R. Reid, M.D., Toronto.

Answer.—An antitoxin serum has been included in N. N. R. Theoretically, there can be no vaccine treatment of this disease since it is produced, not by bacteria, but by the toxin of the pollen of various plants. Vaccines have been used derived from the micro-organisms found in the nasal secretions. They must be regarded as still on trial.

Medical Economics

This Department Embodies the Subjects of Post-graduate Work, Contract Practice, Legislation, Medical Defense, and Other Medicolegal and Economic Questions of Interest to Physicians

THE DAVIS CASE AND THE IOWA STERILIZATION LAW

From a case arising out of an attempt to enforce the Iowa sterilization law, the endeavor is being made to test the constitutionality of such measures before the United States supreme court. The Iowa law is fairly typical of these enactments. It provides for the "prevention of the procreation of criminals, rapists, idiots, feeble-minded, imbeciles, lunatics, drunkards, drug-fiends, epileptics, syphilitics, moral and sexual perverts and diseased and degenerate persons." This law specifically empowers the state board of parole, together with the managing officer and the physician of each public institution in the state, to examine into "the mental and physical condition of the inmates of such institutions with a view of determining whether it is improper or inadvisable to allow any of such inmates to procreate." By a majority decision, this board may order the operation of vasectomy, or ligation of the fallopian tubes, as the case may be, on any inmate. It is particularly set forth that these operations shall be performed on any inmate convicted of prostitution, or twice convicted of other sexual offenses, including soliciting, or who have been twice convicted of a felony.

The Davis case arises under an order of the board authorizing the sterilization of certain convicts who fell under the last clause, that is, who had twice been convicted of a felony. Immediately on the issuance of this order, the plaintiff filed his petition in the federal district court, agreeable to the federal statute providing therefor, praying that an injunction issue to restrain the enforcement of the Iowa sterilization law, on the ground that this law controverted the constitution of the United States, in that the operation as authorized was a cruel and unusual punishment.

As we have seen, the language of the statute under which plaintiff would apparently be classed is "who have been twice convicted of a felony." But from this phraseology it is not quite clear as to just who would be within this class. Hence, the question arises whether the law should apply only to those who had been twice convicted subsequently to the passage of the act or whether it should receive a broader interpretation and apply to any one who had been twice convicted either prior or subsequently to the act. To obtain a proper construction of this language the board wrote the attorney-general for Iowa. In his opinion, the attorney-general said that the issue involves (*a*) the intention of the legislature, that is to say, whether or not the legislature intended the act to apply to persons confined or convicted prior to the taking effect of the act and (*b*) if the legislature so intended, is the act constitutional? The attorney-general resolved the question in favor of the first construction, because the latter construction would tend to render the law unconstitutional as being *ex post facto,* if this operation may be considered as a means of punishment or even if it contained directly an element of punishment. Hence, it was held by the attorney-general that the act should be construed to apply only to those persons who have been convicted of crime subsequently to the taking effect of the act. A further question was also presented in the Davis case, as to whether both convictions should be subsequent to the passage of the act, and whether both convictions should be had in the state of Iowa. This too, was resolved in the affirmative, the attorney-general holding that both convictions must be subsequent to the passage of the act and had in the state of Iowa. The board on receipt of this opinion reversed its order authorizing sterilization of the plaintiff and others.

These facts, together with the affidavits of the prison physician and of the warden of the state penitentiary, were filed as exhibits in the reply of the attorney-general to the petition of the plaintiff for the injunction. This was apparently an attempt so to change the circumstances as to render the federal court without jurisdiction, in that the plaintiff would not be aggrieved by the act. But the court refused to dismiss the petition and enjoined the officers in question, that is, those vested by the statute with the enforcement thereof, from carrying out its provisions. These officials, deeming themselves injured by the decree and order entered by the court, prosecuted their appeal therefrom to the supreme court of the United States, which appeal was granted. Now this appeal would place directly before the United States supreme court the question as to whether or not the Iowa law, as applied directly to those convicted twice of felony, is unconstitutional as being a cruel and unusual punishment were it not for one fact. This is that the supreme court has held that this provision does not apply to state laws but only to enactments of Congress. This position of the court would seem to leave only a question of jurisdiction before it.

The validity of these laws has been twice determined in state supreme courts, but never by the federal court. The Washington supreme court held in the case of *State* v. *Feilen* that the Washington law was not unconstitutional as authorizing a cruel and unusual punishment, while the New Jersey supreme court held the law of that state unconstitutional as being an unreasonable exercise of the police power. The New Jersey law more nearly resembles that of Iowa than does the Washington measure; but the question as presented in the Feilen case is more nearly analogous to the present case, in that the Washington law was being applied to a man who had been convicted of a felony, namely, statutory rape, while in the New Jersey case, the law was being applied to a woman affected with epilepsy. The Washington case has been severely criticized as being hasty and ill-considered; but aside from this it is by no means a precedent for the United States supreme court, if by any possible chance it should be held that a constitutional question has been raised. And therefore, should that tribunal decide that the constitutional question is squarely before it and that the issue is not merely one of jurisdiction, the Davis case, when adjudicated, will be one of great moment and of tremendous import. In that case the issue that would be involved is whether a state can, in the interest of the public welfare, apply a scientific theory for the advancement of the human race and thereunder sterilize twice-convicted criminals, or whether such a measure would be a cruel and unusual punishment as prohibited by the federal constitution. The decision of the supreme court of the United States if made on this point would have bearing on all the sterilization laws so far enacted of which there are at present twelve: California, Indiana, Iowa, Wisconsin, Washington, New York, New Jersey, North Dakota, Michigan, Connecticut, Kansas and Nevada. A negative opinion would abrogate practically all these laws and would in effect deny the right of a state to adopt unproved theories for race betterment, while an affirmative finding will open the way to the application of a vast untried mass of theories. But as has been said it is extremely doubtful that the federal court will hold the question before them.

And thus the issue will be left as at present to the decisions of the several states.

Sanitation at Home.—It is a curious fact, and one by no means gratifying to our national pride, that when we wish to illustrate the value of modern sanitary laws and regulations we draw our most striking illustrations from outside the United States proper. For instance, modern sanitary science backed up by wise sanitary laws and sufficient authority to enforce these laws has abolished yellow fever in Cuba and the Canal Zone, has controlled largely the ravages of hookworm in Porto Rico and has isolated and controlled leprosy in Hawaii and the Philippines.—W. F. King, M. D., in *Jour. Indiana State Med. Assn.*

Book Notices

Annual Reprint of the Reports of the Council on Pharmacy and Chemistry of the American Medical Association. With the comments that have appeared in The Journal. Cloth. Price, 50 cents. Pp. 56. Chicago: American Medical Association Press, 1913.

New and Nonofficial Remedies is devoted to a discussion of medicinal substances which the Council on Pharmacy and Chemistry has found eligible for recognition under its rules. This separate volume of reports contains descriptions of preparations which were not satisfactory. It includes, first, preparations which were examined, found wanting in some particular and hence denied admission to New and Nonofficial Remedies, and second, articles which at one time were admitted to the book and later in the light of further evidence, or because they were no longer marketed ethically, had to be omitted. Many of the reports included in the present volume were previously published in The Journal. These reports are of great interest as showing the amount of time and the extent of the investigation which the Council gives to individual products. One report deals with a series of glycerin esters of lactic acid called Dianols. The Council with the aid of its chemical laboratory had the duty of convincing an unwilling scholar—a German firm—that its preparations are not what they are said to be, evidently because of inherent instability. In another report the Council showed the "Perfection Liquid Food Company" that a malt extract flavored with meat extract does not make a perfect food. Although the name "Perfection Liquid Food" is enough to condemn the product to thinking men, the Council studied patiently a mass of half information and commercial analytic reports which had been submitted before definitely rejecting the product. Those who have been inclined to give ear to the reports that the Council on Pharmacy and Chemistry takes its work lightly and allows personal bias to affect its decisions should get the present volume and read these reports. The Council possibly takes evidently worthless or fraudulent products too seriously, but its reports are certainly not based on snap judgment.

Die Entstehung der menschlichen Lungenphthise. Von Privatdozent A. Bacmeister, Assistant der medizinischen Universitätsklinik zu Freiburg. Paper. Price, 2.40 marks. Pp. 80. Berlin: Julius Springer, 1914.

In this monograph, Bacmeister discusses a problem on which there has been much difference of opinion and on which his researches have thrown much light. The agency of the bacillus in the production of all forms of tuberculosis is universally acknowledged and no longer merits discussion. The problem of the pathogenic nature of the bovine strain of bacillus may also be said to be settled, but it is not yet determined what part it may play in the causation of human phthisis. It is one thing to assert that the bovine tubercle bacillus is an excitant of tuberculosis in man and another to determine its share in the production of pulmonary tuberculosis as it appears in the adult human being. Bacmeister makes it plain that pulmonary tuberculosis in the adult is a different type of disease from that observed in animal experiment or in children. The disease in adults begins at the apex and progresses as a rule somewhat slowly, indicating a special predisposition of a part of the lung and a certain resisting power in the adult not seen in the child. The channel by which the bacteria reach the lung may be, according to Bacmeister, either by inhalation or through the blood from some former focus of infection. Phthisis may be produced in either of these ways, provided the apex of the lung is sufficiently predisposed. The influence of infection in childhood on the development of phthisis in adult life is thoroughly discussed. Bacmeister's conclusion is that the outbreak of phthisis in adult life after the occurrence of tuberculosis in infancy is due not to a general transformation of the whole organism, but to the production of a local predisposition. In the discussion of the individual predisposition of the lung to develop phthisis, Bacmeister formulates the following principle: All factors which lead to an obstruction to the flow of lymph at the apex of the lung form an occasion for the localization of the tuberculous process in that neighborhood. In this retardation of the tubercle bacilli, in this obstruction to the lymph-flow, in this inability of the lung apices to free themselves from the bacilli which settle there by preference lies the peculiar local predisposing influence. The author's own work, which has shown that it is possible to so adjust the local and general condition as to produce almost typical phthisis in animals by obstructing the lymph-flow, emphasizes the importance of the principle stated. Disease of the upper air-passages may bring about such an obstruction of the lymph-flow, and the influence of general diseases of an enfeebling nature in hindering active respiration is a factor not to be neglected. The organic changes in the cartilage of the first rib and the deformity of the upper aperture of the chest which have been emphasized by Freund and Hart are to be regarded as factors, but not the only ones which tend to bring about the development of a local predisposition to apical phthisis. In conclusion the author draws the lesson that there is no reason to confine prophylaxis to a definite age period. The germ of phthisis may be received in childhood and the healthy adult may, at any time, fall a victim to the disease. The battle against the enemy must be carried on at every age. This fact is not affected by our knowledge that certain years of life are of special importance for the factors which lead to consumption both for the infection and for the development of the predisposition.

Der Blutdruck des Menschen. Ergebnisse der Tonometrie. Von Dr. Arthur Horner, em. Assistent der I Medizin. Mit einem Vorwort von Prof. Dr. J. Pal. Paper. Price, 6 kroner. Pp. 198, with 7 illustrations. Vienna: Moritz Perles, 1913.

This monograph comprises a description of the physical and physiologic principles on which the measurement of the blood-pressure of man depends, followed by a description of the instruments and technic of the determination, and a study of the relations of the blood-pressure in various diseases. A bibliography of twenty-five pages gives one an indication of the space filled in modern clinical medicine by it and the labor necessary to produce a reliable review like the present. In therapy, drugs, physical remedies, etc., are discussed. A few proprietaries are noticed but not indiscriminately praised, as is so often the case. A brief discussion of the treatment of conditions of low blood-pressure is included. On the whole, the work must be regarded as a suitable guide to the diagnosis and treatment of conditions dependent on alterations in the blood-pressure.

Cunningham's Text-Book of Anatomy. Edited by Arthur Robinson, M.D., F.R.C.S., Professor of Anatomy, University of Edinburgh. Fourth Edition. Cloth. Price, $6.50 net. Pp. 1596, with 1124 illustrations. New York: William Wood & Co., 1913.

Practically every section of this book has been revised, a few departments have been entirely rewritten, and some new chapters have been added. The deaths of Cunningham, Birmingham and A. H. Young have necessitated bringing new blood into the authorship of the volume. This has not, however, detracted from its quality. The Basle anatomic nomenclature is employed, the old terminology being also given in many instances. A glossary of old and new terms precedes the text and the illustrations, many colored, are abundant and instructive. On the whole, Cunningham's text-book may be considered a useful and dependable single volume work on anatomy.

Kurzgefasste Lehre von den Knochenbrüchen mit Besonderer Berücksichtigung Ihrer *Mechanik und* Biologie. Herausgegeben von Dr. F. de Quervain, o. ö. Professor der Chirurgie. Unter Mitarbeit von Dr. Th. Christen, Privatdozent für Physikalische Therapie and Dr. H. Iselin, Privatdozent für Chirurgie, und nach den Mitteilungen und Aufzeichnungen des Verstorbenen Dr. H. Zuppinger, Privatdozent für Medizinische Mechanik. Part 1. Paper. Price, 9 marks. Pp. 140, with 123 illustrations. Leipsic: F. C. W. Vogel, 1913.

This is a short, clear and well-written treatise on the mechanics of the production and treatment of fractures in general, with diagrams, reproductions of roentgenograms and photographs showing the especial pathology and management of the more common varieties. The portion devoted to the open operative methods is short but sound, and properly conservative. Nothing new is advanced. There is shown the ingenious automatic extension apparatus for fractures of the femur designed by Zuppinger, to whom the book is in effect a memorial.

The Home Nurse. By E. B. Lowry, M.D., Cloth. Price, $1. Pp. 224. Chicago: Forbes & Co., 1914.

This practical little work is intended for use when sick members of a family must be cared for at home without the aid of a trained nurse. It is free from technical terms, and methods of bathing and administration of external remedies are so clearly described that any one of ordinary intelligence may easily follow the directions. One criticism: In discussing the nursing of typhoid fever the author says, "Occasionally it is necessary to give a turpentine enema." It might be well to omit this sentence from later editions as turpentine is seldom given on account of its effect on the kidneys, and some home nurses might be tempted to give it without orders if the tympanites was not relieved quickly by other measures.

Miscellany

Charles Dickens on Children's Hospitals

To the Editor.—Few of your readers are perhaps acquainted with the after-dinner speech delivered by Charles Dickens at the anniversary festival of the Hospital for Sick Children at Freemasons' Hall, London, Feb. 9, 1858. It is not contained in his collected works and is worth reprinting on account of its large human and social interest. Charles Dickens and Charles Reade did as much as any other men of their time to reform the status of prisons, insane asylums and dangerous occupations. Dickens was always a clever satirist of the foibles of doctors, and Reade was everywhere a keen critic of the medical practice of his time.

If the sentiment of this beautiful speech should seem exaggerated to those who see everything in terms of the "struggle for existence," it is well to remember that Dickens had a peculiarly delicate and kindly feeling for children as a result of the rough handling which he had himself received in his early life. With the exception of Shakespeare and Charles Lamb, no one wrote better of children than Dickens, and his hospital speech (subjoined) seems one of the best contributions ever made to the cause of social medicine by a man of genius.

F. H. Garrison, M.D., Washington, D. C.

At the anniversay festival, after the usual loyal and other toasts, the chairman, Mr. Dickens, proposed "Prosperity to the Hospital for Sick Children," and said.

"Ladies and Gentlemen:

"It is one of my rules in life not to believe a man who may happen to tell me that he feels no interest in children. I hold myself bound to this principle by all kind consideration, because I know, as we all must, that any heart which can really toughen its affections and sympathies against those dear little people must be wanting in so many humanizing experiences of innocence and tenderness, as to be quite an unsafe monstrosity among men. Therefore I set the assertion down, whenever I happen to meet with it—which is sometimes, though not often—as an idle word, originating possibly in the genteel languor of the hour, and meaning about as much as that knowing social lassitude, which has used up the cardinal virtues and quite found out things in general, usually does mean. I suppose it may be taken for granted that we, who come together in the name of children and for the sake of children, acknowledge that we have an interest in them; indeed, I have observed since I sat down here that we are quite in a childlike state altogether representing an infant institution, and not even yet a grown-up company. A few years are necessary to the increase of our strength and the expansion of our figure; and then these tables, which now have a few tucks in them, will be let out, and then this hall, which now sits so easily upon us, will be too tight and small for us. Nevertheless, it is likely that even we are not without our experience now and then of spoilt children. I do not mean of our own spoilt children, because nobody's own children ever were spoilt, but I mean the disagreeable children of our particular friends. We know by experience what it is to have them down after dinner, and, across the rich perspective of a miscellaneous dessert to see, as in a black dose darkly, the family doctor looming in the distance. We know, I have no doubt we all know, what it is to assist at those little maternal anecdotes and table entertainments illustrated with imitations and descriptive dialogue which might not be inaptly called, after the manner of my friend Mr. Albert Smith, the toilsome ascent of Miss Mary and the eruption (cutaneous) of Master Alexander. We know what it is when those children won't go to bed; we know how they prop their eyelids open with their forefingers when they will sit up; how, when they become fractious, they say aloud that they don't like us, and our nose is too long, and why don't we go? And we are perfectly acquainted with those kicking bundles which are carried off at last protesting. An eminent eye-witness told me that he was one of a company of learned pundits who assembled at the house of a very distinguished philosopher of the last generation to hear him expound his stringent views concerning infant education and early mental development, and he told me that while the philosopher did this in very beautiful and lucid language, the philosopher's little boy, for his part, edified the assembled sages by dabbling up to the elbows in an apple pie which had been provided for their entertainment, having previously anointed his hair with the syrup, combed it with his fork, and brushed it with his spoon. It is probable that we also have our similar experiences sometimes, of principles that are not quite practice, and that we know people claiming to be very wise and profound about nations of men who show themselves to be rather weak and shallow about units of babies.

"But, ladies and gentlemen, the spoilt children whom I have to present to you after this dinner of to-day are not of this class. I have glanced at these for the easier and lighter introduction of another, a very different, a far more numerous, and a far more serious class. The spoilt children whom I must show you are the spoilt children of the poor in this great city, the children who are, every year, for ever and ever irrevocably spoilt out of this breathing life of ours by tens of thousands, but who may in vast numbers be preserved if you, assisting and not contravening the ways of Providence, will help to save them. The two grim nurses, Poverty and Sickness, who bring these children before you, preside over their births, rock their wretched cradles, nail down their little coffins, pile up the earth above their graves. Of the annual deaths in this great town, their unnatural deaths form more than one-third. I shall not ask you, according to the custom as to the other class—I shall not ask you on behalf of these children to observe how good they are, how pretty they are, how clever they are, how promising they are, whose beauty they most resemble —I shall only ask you to observe how weak they are, and how like death they are! And I shall ask you, by the remembrance of everything that lies between your own infancy and that so miscalled second childhood when the child's graces are gone and nothing but its helplessness remains; I shall ask you to turn your thoughts to these spoilt children in the sacred names of Pity and Compassion.

"Some years ago, being in Scotland, I went with one of the most humane members of the humane medical profession, on a morning tour among some of the worst-lodged inhabitants of the old town of Edinburgh. In the closes and wynds of that picturesque place—I am sorry to remind you what fast friends picturesqueness and typhus often are—we saw more poverty and sickness in an hour than many people would believe in a life. Our way lay from one to another of the most wretched dwellings, reeking with horrible odors; shut out from the sky, shut out from the air, mere pits and dens. In a room in one of these places where there was an empty porridge-pot on a cold hearth, with a ragged woman and some ragged children crouching on the bare ground near it—where, I remember as I speak, that the very light, refracted from a high damp-stained and time-stained house-wall, came trembling in, as if the fever which had shaken everything else there had shaken even it—there lay, in an old egg-box which the mother had begged from a shop, a little feeble, wasted, wan, sick child. With his little wasted face, and his little hot, worn hands folded over his breast, and his little bright, attentive eyes, I can see him now, as I have seen him for several years, looking steadily at us. There he lay in his little frail box, which was not at all a bad emblem of the little body from which he was slowly parting—there he lay, quite quiet, quite patient, saying never a word. He seldom cried, the mother said; he seldom complained; 'he lay there, seemin' to woonder what it was a' aboot'. God knows, I thought, as I stood looking at him, he had his reasons for wondering—reasons for wondering how it could possibly come to be that he lay there, left alone, feeble, and full of pain, when he ought to have been as bright and as brisk as the birds that never got near him—reasons for wondering how he came to be left there, a little decrepit old man pining to death, quite a thing of course, as if there were no crowds of healthy and happy children playing on the grass under the summer's sun within a stone's throw of him, as if there were no bright moving sea on the other side of the great hill overhanging the city; as if there were no great clouds rushing over it; as if there were no life, and movement, and vigor anywhere in the world—nothing but stoppage and decay. There he lay looking at us, saying, in his silence, more pathetically than I have ever heard anything said by any orator in my life, 'Will you please to tell me what this means, strange man? and if you can give me any good reason why I should be so soon, so far advanced on my way to Him who said that children were to come into His presence, and were not to be forbidden, but who scarcely meant, I think, that they should come by this hard road by which I am traveling; pray give that reason to me, for I seek it very earnestly and wonder about it very much.'; and to my mind he has been wondering about it ever since. Many a poor child, sick and neglected, I have seen since that time in this London; many a poor sick child I have seen most affectionately and kindly tended by poor people, in an unwholesome house and under untoward circumstances, wherein its recovery was quite impossible; but at all such times I have seen my poor little drooping friend in his egg-box, and he has always addressed his dumb speech to me, and I have always found him wondering what it meant, and why, in the name of a gracious God, such things should be!

"Now, ladies and gentlemen, such things need not be, and will not be, if this company, which is a drop of the life-blood of the great compassionate public heart, will only accept the means of rescue and prevention which it is mine to offer. Within a quarter of a mile of this place where I speak, stands a courtly old house, where once, no doubt, blooming children were born, and grew up to be men and women, and married and brought their own blooming children back to patter up the old oak staircase which stood but the other day, and to wonder at the old oak carvings on the chimney-pieces. In the airy wards into which the old state drawing-rooms and family bedchambers of that house are now converted are such little patients that the attendant nurses look like reclaimed giantesses, and the kind medical practitioner like an amiable Christian ogre. Grouped about the little low tables in the center of the rooms are such tiny convalescents that they seem to be playing at having been ill. On the dolls' beds are such diminutive creatures that each poor sufferer is supplied with its tray of toys; and, looking round, you may see how the little tired, flushed cheek has toppled over half the brute creation on its way into the ark; or how one little dimpled arm has mowed down (as I saw myself) the whole tin soldiery of Europe. On the walls of these rooms are graceful, pleasant, bright childish pictures. At the beds' heads are pictures of the figure which is the universal embodiment of all mercy and compassion, the figure of Him who was once a child himself, and a poor one. Besides these little creatures on the beds, you may learn in that place that the number of small outpatients brought to that house for relief is no fewer than ten thousand in the compass of one single year. In the room in which these are received, you may see against the wall a box on which it is written that it has been calculated that if every grateful mother who brings a child there will drop a penny into it, the hospital funds may possibly be increased in a year by so large a sum as forty pounds. And you may read in the hospital report, with a glow of pleasure, that these poor women are so respondent as to have made, even in a toiling year of difficulty and high prices, this estimated forty, fifty pounds. In the printed papers of this same hospital, you may read with what a generous earnestness the highest and wisest members of the medical profession testify to the great need of it; to the immense difficulty of treating children in the same hospitals with grown-up people, by reason of their different ailments and requirements, to the vast amount of pain that will be assuaged, and of life that will be saved, through this hospital; not only among the poor, observe, but among the prosperous too, by reason of the increased knowledge of children's illnesses, which cannot fail to arise from a more systematic mode of studying them. Lastly, gentlemen, and I am sorry to say, worst of all (for I must present no rose-colored picture of this place to you—I must not deceive you) lastly, the visitor to this children's hospital, reckoning up the number of its beds, will find himself perforce obliged to stop at very little over thirty; and will learn, with sorrow and surprise, that even that small number, so forlornly, so miserably diminutive compared with this vast London, cannot possibly be maintained, unless the hospital be made better known; I limit myself to saying better known, because I will not believe that in a Christian community of fathers and mothers, and brothers and sisters, it can fail, being better known, to be well and richly endowed.

"Now, ladies and gentlemen, this without a word of adornment—which I resolved when I got up not to allow myself—this is the simple case. This is the pathetic case which I have to put to you; not only on behalf of the thousands of children who annually die in this great city, but also on behalf of the thousands of children who live half developed, racked with preventable pain, shorn of their natural capacity for health and enjoyment. If these innocent creatures cannot move you for themselves, how can I possibly hope to move you in their name? The most delightful paper, the most charming essay, which the tender imagination of Charles Lamb conceived, represents him as sitting by his fireside on a winter night telling stories to his own dear children, and delighting in their society, until he suddenly comes to his old, solitary, bachelor self, and finds that they were but dream children, who might have been, but never were. 'We are nothing,' they say to him; 'less than nothing, and dreams. We are only what might have been, and we must wait on the tedious shore of Lethe, millions of ages, before we have existence and a name.' And immediately awaking, he says, 'I found myself in my armchair.' The dream-children whom I would not raise, if I could, before every one of you, according to your various circumstances, should be the dear child you love, the dearer child you have lost, the child you might have had, the child you certainly have been. Each of these dream-children should hold in its powerful hand one of the little children now lying in the child's hospital, or now shut out of it to perish. Each of these dream-children should say to you, 'O, help this little suppliant in my name; O, help it for my sake! Well!—And immediately awaking, you should find yourselves in the Freemasons' Hall happily arrived at the end of a rather long speech, drinking 'Prosperity to the Hospital for Sick Children,' and thoroughly resolved that it shall flourish."

Cost of Medical Treatment in Bohemia

"The city of Prague", says Consul Frank Deedmeyer, Prague, Austria, "population with suburbs 600,000, has about 800 practicing physicians. A medical house call to a middle-class family costs $0.60; an office call, $0.50; a night call, between 9 and 7, $1.20 to $2, according to distance. Professors attached to the clinics of the two local universities charge much more—$2 to $4 for a house call and $1.20 to $2 for an office visit. The physicians, except those of the homeopathic school, do not supply medical remedies.

"At most of the hospitals under the control of the Roman Catholic associations, treatment and care are entirely free; at the Allgemeines Krankenhaus in Prag (General Hospital in Prague), a government institution, which had over 24,000 admissions in 1913, the charges to patients, including medical treatment and nursing, per day, are: Class I, $2.40; Class II, $1.20; and Class III, $0.52. To citizens of Prague the Class III charge is only $0.31. The cost per day at a private sanatorium, of which there are many, ranges from $2.20 to $4.80. Nurses at hospitals are paid $0.80 per day for the first year, with an annual increase of $0.20 per month; at sanatoriums, from $6 to $8 per week; at private houses, from $0.80 to $1 per day, board being always included for all nurses."

Medicolegal

Admissible Evidence in Action for Malpractice

(Baker vs. Langan (Ia.), 145 N. W. R. 513)

The Supreme Court of Iowa says that a verdict for the defendant ought not to have been directed in this action for alleged malpractice in the treatment of a simple fracture of both bones of the plaintiff's leg about 3 inches above the ankle-joint. There should be a new trial. The defendant introduced no testimony, and that offered and received for and on behalf of the plaintiff should be given the strongest interpretation in his favor. Of course no one may expect as strong a leg after as before a fracture, and no physician or surgeon is held to a guaranty of results; but he is held to the exercise of the skill and learning of the profession generally in the community in which he practices. Whether or not he did that in a particular case may be proved either deductively or inductively, and the usual and customary treatment of physicians and surgeons in the particular locality may be shown in order to ascertain whether or not the defendant exercised the skill required of him.

The court thinks too, that competent physicians and surgeons who have examined the result and learned of the treatment or know what treatment should have been given, if assured of the patient's prior condition of health, and of his own care and treatment of the fracture, may properly give an opinion as to whether or not they found such results as usually follow from the customary treatment of such a case by men possessing the usual skill and learning of their profession in the locality where they practice. Such testimony must of necessity be admissible, for it may happen that the injured man is incapable himself of accurately describing the treatment given.

Certain questions were propounded to show the condition of the plaintiff's blood at the time he was injured. It was true that he was not complaining of any infection, but the record showed that the condition of his blood might have had something to do with the success of the treatment given him by the defendant. In view of the other testimony in the case, the court is inclined to think that the witness should have been permitted to answer the questions propounded, leaving the final conclusion to the jury.

Injury From Hot-Water Bag During Operation—Permitting Wound to Heal Over Drainage-Tube—Husband's Damages

(Reeves vs. Lutz (Mo.), 162 S. W. R. 280)

The St. Louis (Mo.) Court of Appeals says that the defendant was employed to remove a cancer from the breast of the plaintiff's wife. The defendant's obligation was to exercise ordinary care for the protection of Mrs. Reeves from burns likely to occur as a result of the application of hot-water bags while the operation was being performed. If, as the defendant and the expert witnesses said, burns are frequently inflicted in such a manner, then the precepts of ordinary care required the defendant to anticipate this possibility. The evidence was that the hot-water bag was wrapped in a towel and the patient's limb covered with a flannel operating garment. A considerable and severe burn, however, ensued from the application of the hot-water bag. Inspection of the bag would have revealed the probabilities of a burn, notwithstanding the towel and the flannel garment. Moreover, the application of the hot-water bag continued for two hours, and during that time some inspection should have been made to ascertain if an injury was thus being inflicted. Obviously the evidence revealed a case for the jury. An instruction was erroneous which implied that if the defendant used proper care in performing the operation, he was then acquitted of the full measure of his obligation, and this, too, although the hot-water bag came in contact with the person of the plaintiff's wife and burned her. It was not enough for the defendant to exercise the requisite skill and care in performing the operation; he was under obligation also to look out for and prevent the burn. There was no evidence in this case justifying the theory of accident.

The drainage-tube involved was inserted in the wound in the right breast, and the averment of negligence was that the defendant "carelessly and unskilfully permitted said wound completely to heal up and over said drainage-tube and gauze, and negligently, carelessly and unskilfully permitted the same to remain within the body of the plaintiff's said wife." No one can doubt that this was negligence on the part of the defendant, if established to the satisfaction of the jury. It could not be said that a verdict should have been directed for the defendant on this cause of action, because the evidence was uniform that it was proper practice to insert a drainage-tube in the wound and permit it to remain there until the healing was complete. No witness testified that it was proper to permit the wound to heal over the tube, and it is certain that none would undertake to do so.

The plaintiff sought to recover only for the loss of services, companionship and society of his wife as a result of the burn and permitting the wound to heal over the drainage-tube. For the latter the court does not consider a verdict of $1,500 was excessive. The plaintiff was not entitled to recover for the pain and suffering his wife endured, but he was entitled to the services of his wife of which such pain and suffering deprived him, and he was entitled, too, to the companionship and society of his wife free of such pain and suffering as the defendant's act entailed on her. Therefore it was not error to permit the plaintiff to detail the pain and suffering of his wife incident to the concealed tube in her breast and subsequent for a time to its removal.

Case in which Surgeon not Liable for Death when Administration of Anesthetic was by Medical Student

(Michael A. Levy, Administrator, vs. Vaughan (D. C.), 42 Wash. Law R. 258)

The Court of Appeals of the District of Columbia says that the patient was a man about 6 feet, 1 inch in height, weighing 275 pounds and suffering from hernia, on whom the defendant undertook to perform an operation at a hospital. The ether was administered, in the room provided therefor, by what is called the "open method," with the "Esmarch inhaler." The administrator of the ether was a medical student in his last year of a four-year course, to graduate in the following June. He had carefully studied the subject of administering ether, and had observed its administration in at least a thousand cases in a number of hospitals. He had actually administered ether, before, in eight or ten cases. Two medical interns, graduated surgeons and physicians, were in and out of the room during the administration. Not more than 3 ounces of ether were administered during the *twenty-five* or *thirty* minutes required to get the patient completely under its influence. No unusual condition was noticed until after the patient had been lifted to the operating-table. He was then observed to be cyanotic. The defendant, who was waiting in the operating-room, noticed the condition immediately, felt the patient's pulse, and started artificial respiration. The patient seemed better and was taken to the ward, but respiration became bad again. Remedies were used and the defendant was sent for and again performed artificial respiration; but the patient's respiration ceased and he died. A necropsy was performed and the patient's heart was found to be in a state of fatty degeneration. A verdict was properly directed for the defendant, judgment on which is affirmed with costs. It was the duty of the defendant to use such reasonable care and skill as are usually given by surgeons in good standing, but it was incumbent on the plaintiff to prove that the death was caused by the failure of the defendant to exercise such care. There was no evidence whatever to justify submission to the jury of the question of negligence either in the preliminary examination of the patient or in the administration of the ether. There was no error in refusing to permit the following question to be answered by a medical witness: "In your opinion, would a surgeon be in the exercise of due care if he intrusted the administration of ether to a student of the description given, without making some provision for the presence of an experienced physician?" The evidence on behalf of the plaintiff showed that at least two experienced hospital physicians were present generally during the administration. They were employed in the hospital, and that they may not have been provided by the defendant was wholly immaterial. Nor was it material that the hospital physicians were licensees of another state, and not of the District of Columbia, as they were not practicing medicine in the District, but were engaged in the hospital and shown to be competent.

Requirement as to Record of Certificate

(Byrd vs. State (Tex.), 162 S. W. R. 360)

The Court of Criminal Appeals of Texas says that, under the present law of 1907, no one can legally practice medicine in that state unless he has, and has recorded, a certificate granted by the board of medical examiners either with or without a personal examination. So that under the present law, whether he has a diploma or not, or a dozen diplomas, for that matter, the law does not provide that he may record it or them, as his authority to practice medicine; but they may be used by him as evidence before the board to avoid an examination for a certificate, and thereby to procure the verification license provided for by said act.

The unconstitutionality of the law was urged on the ground that it does not definitely and intelligently describe before whom certificates shall be registered. The fact that the act requires the physician to register his certificate to practice medicine "in the district clerk's office of the county in which he resides," in Section 4 of the act, and that the next section or article makes it the duty "of the district clerk of each county in this state to purchase a book," etc., in which to register such license, instead of, as the appellant claimed, that he should be designated as "the clerk of the district court," is certainly very hypercritical and should mislead no one, and is definite and certain in that the clerk of the district court is meant, if there is any difference between the "clerk of the district court" and the "district clerk" of a given county. The appellant's contention as to the unconstitutionality of the act on this ground, and that the indictment was fatally defective because thereof, was wholly without merit.

Privilege Covers Instructions and Their Observance—Acts not Waivers

(Marfia vs. Great Northern Railway Co. (Minn.), 145 N.W.R. 385)

The Supreme Court of Minnesota says that one of the plaintiff's legs had been broken and that owing to an improper union of the bones the leg was shortened. The defendant railway company sought to show by the attending physicians that the plaintiff had failed to heed or follow their instructions as to the care and treatment of the injured limb and thus that the plaintiff himself had displaced these bones by his own improper acts. The company contended that instructions given the patient and his attitude and conduct as to obeying them were not within the inhibition of the statute as to privileged communications. But it was held that this testimony was properly excluded under the statute supra. The testimony of the physicians called as witnesses in this case by the plaintiff was confined to the information acquired by their own examination, made shortly before the trial and after the leg had healed. The plaintiff himself testified concerning the manner in which the injury occurred and his present condition in consequence thereof. Neither the plaintiff nor the physicians called by him testified as to the matters which the defendant sought to elicit from the attending physicians. The bringing of the action and the presentation of the testimony adduced by the plaintiff did not operate as a waiver of the privilege.

Society Proceedings

COMING MEETINGS

American Roentgen Ray Society, Cleveland, Sept. 9-12.
Michigan State Medical Society, Lansing, Sept. 11-12.
Oregon State Medical Association, Portland, Sept. 10-11.
Colorado State Medical Society, Boulder, Sept. 8-10.

AMERICAN CLIMATOLOGICAL ASSOCIATION

Thirty-First Annual Meeting, held at Atlantic City, N. J., June 19 and 20, 1914

Officers Elected

The following officers were elected for the ensuing year: president, Dr. Henry Sewall, Denver; vice-presidents, Dr. Arthur K. Stone, Boston, and Dr. James Alexander Miller, New York; secretary and treasurer, Dr. Guy Hinsdale, Hot Springs, Va.

The next annual meeting will be held in San Francisco.

Prolonged Subnormal Temperature in Tuberculosis

DR. A. K. STONE, Boston: At a certain period of the disease, usually after the active febrile stage, there is a time when the temperature curve shows a marked excursion into the subnormal. In this stage, not much more latitude should be allowed the patients in their movements than in the active stage. When there is a constant variation in the temperature from the normal, there must be a pathologic process going on in the body. This subnormal temperature has no prognostic value. The patients are usually improving at this time, but very little is required to give them an exacerbation of the disease. Persistent subnormal temperature is rather a common symptom in tuberculosis, and when this symptom is present, tuberculosis should be suspected.

DISCUSSION

DR. CHARLES L. MINOR, Asheville, N. C.: There is one common causation for this subnormal temperature, and that is lowered activity of metabolism. It expresses inherent weakness, overexertion and very cold weather. It is a sign that the patient needs vitalizing.

DR. GEORGE W. NORRIS, Philadelphia: Persistent subnormal temperature is frequently associated with lowered blood-pressure, and occurs in persons with visceroptosis. There is considerable difference of opinion in regard to the value of blood-pressure readings in tuberculosis. These patients have a general unfitness to maintain a normal blood-pressure. They may be suspected of having tuberculosis on this account, when they do not have it at all.

DR. WILLIAM LEROY DUNN, Asheville, N. C.: There is a great discrepancy between the rectal and the mouth temperature in many of these cases; and before it is decided that a patient has a persistent subnormal temperature, rectal observations should be made.

DR. C. FOX GARDINER, Colorado Springs, Colo.: I should look to the correctness of the thermometers also. Some of those possessed by patients are very inaccurate.

DR. GORDON WILSON, Baltimore: In studying cases of broken compensation, which constantly show subnormal temperature, I have found the diastolic blood-pressure to be low. As this came up, the temperature also came to normal. I have found this true also in tuberculous cases.

DR. JAMES A. MILLER, New York: I think it well to go slow in drawing definite conclusions from temperature observations. We need more careful observations of the normal temperature under varying conditions of life—environment, atmosphere, exercise, etc.—both by the mouth and by the rectum.

DR. CLEAVELAND FLOYD, Boston: I have seen some striking results from taking the mouth and the rectal temperature at the same time.

DR. CARROLL E. EDSON, Denver: The fundamental basis of the physiology of normal temperature has not yet been worked out wholly; and until this has been done, we should be careful in drawing conclusions. The clinical temperature is of two kinds, deserving different management; those in which the daily range is slight, but in which it is slightly subnormal in the morning: and those in which, although the afternoon temperature may be only 98.2 F., yet the morning temperature is but 97.8 F., so that there is as much swing as if there were the ordinary range of tuberculous temperature. The latter cases constitute the type in which the resistance is low, and correspond to the type of low diastolic pressure. Rest in bed is important for such patients.

DR. W. D. ROBINSON, Philadelphia: In taking the temperature by the rectum, one should be sure that there is no low-grade pathologic process taking place in the lower bowel (as is often the case), as this would influence the temperature.

Housing and Its Relation to Climate and Health

DR. ESTES NICHOLS, Portland, Me.: America has been very slow in recognizing the importance of housing and its relation to climate and the health of the masses. The method of having one home on top of another, many stories high, is unnatural and unhealthful. The present system of apartment houses is placing a premium on the rearing of children. We should take a more active part in housing reform. We should apply to the cities some of the principles of housing used at health resorts.

DISCUSSION

DR. THOMAS DARLINGTON, New York: It is sometimes difficult to determine how much of the ill health of the people is due to overcrowding, and how much to other causes, such as lack of ventilation, bad food, soil pollution, contagion, etc.

DR. H. M. LANDIS, Philadelphia: The people have quite as much to do with making the result as the houses. Any improvement in the slums will have to come as much through educating the people how to use hygienic conveniences that are at their command as through providing them with properly constructed houses.

DR. DAVID R. LYMAN, Wallingford, Conn.: If the people are taught to make use of what housing conditions they have, they can get along better in good tenements in the city than they can in the country. Some of the worst infections with tuberculosis that I have met have been in the rural districts. There the people have many natural advantages, but do not know how to use them.

DR. ROBERT C. PATERSON, Ste. Agathe des Monts, Quebec: If the people should leave the cities and go to the rural districts, how could we supply them with proper facilities for sewage disposal and other sanitary advantages? In the mountains north of Montreal, where we send people for their health, we find that the death-rate from tuberculosis is as high as anywhere else, if not higher. Though the people can get fresh air, they will not get it.

DR. E. O. OTIS, Boston: One of the worst slum districts of Northampton was formerly occupied mostly by Irish people, and the death-rate from tuberculosis was very high. The Irish have now been almost entirely displaced by the Russian Jews and Italians, and a most striking fall in the death-rate from this disease has taken place.

DR. W. D. ROBINSON, Philadelphia: In Philadelphia, we have accomplished a great deal by the establishment of open-air schools for children. It is better to try to deal with conditions of environment as they exist than to try to change them. Our county medical society, some years ago, appointed a Committee on Infant Mortality, which has been very active in establishing baby-saving shows for the education of the people. These have been wonderfully successful, and have reached the class desired.

Some Unsolved and Debatable Problems in Tuberculosis

DR. E. H. OTIS, Boston: An undue amount of emphasis is placed on the physical signs in the early diagnosis of tuberculosis. In regard to forbidding marriage for tuberculous persons, I think that one should be cautious about advising race suicide, except for very good reasons. I do not believe that any predisposition to the disease is caused in the offspring that cannot be overcome by hygienic surroundings and proper food. Undue exercise of both the lung and the body are attended with danger; while, on the other hand, rest sometimes has a very good effect. Open-air treatment has no value in advanced cases. It is better to keep such patients in a well-ventilated room. The problem of prevention with persons who, though actively tuberculous, are able to continue their business and their social duties, is a difficult one to solve. In trying to conceal their condition, they fail to take proper precautions.

Rest and Exercise in the Treatment of Pulmonary Tuberculosis

DR. C. L. MINOR, Asheville, N. C.: Exercise is an elastic term, and we should be definite in specifying the amount, both physical and mental, that our patients should take. I would make a distinct arbitrary division into light, medium and severe exercise. Walking is the best physical exercise. Mental exercise and rest are more difficult to control than physical. It would be desirable to have the patients become accustomed to doing a certain amount of work, of the kind that they are going to do when they return to business.

DISCUSSION

DR. THOMAS DARLINGTON, New York: There can be no stated rule with regard to the question of rest and exercise. Each individual case must be studied by itself.

DR. C. L. MINOR, Asheville, N. C.: I am satisfied that we have been overstrict in forbidding the marriage of tuberculous patients. We must consider the welfare of the man, the woman and the child in such cases, and also that of the community. If the child is separated from the mother immediately after birth, it is possible for it to grow up healthy. The world would be much poorer without the good done by the offspring of tuberculous marriages.

DR. D. ROCHESTER, Buffalo: If tuberculous persons are allowed to marry, they should be instructed thoroughly regarding the dangers connected with marriage. We lose less by forbidding tuberculous women to marry than we gain by letting them do so. Undue emphasis is often placed on physical signs when they have not been found; but sometimes they are not found, when they are present, because the examiners are not able to find them. The frequency of the pulse and its character afford a valuable sign in the diagnosis of tuberculosis.

DR. C. F. GARDINER, Colorado Springs, Colo.: At Colorado Springs, there is much less disease among the children of tuberculous parents than one would expect.

DR. JAMES A. MILLER, New York: This matter varies considerably according to the point of view, whether this be that of a physician at a sanatorium or health resort or one in a large city, where the question of early diagnosis is most important, and where the responsibility for this is greatest. We have, perhaps, overdone our insistence on this responsibility, so that some physicians make a diagnosis of tuberculosis on insufficient grounds. In large cities, where the temptations to overdo are so great, we shall get along better by leaning more to the rest idea than by emphasizing the advantages of exercise.

DR. HERBERT M. KING, New York: If our conclusions had any effect, the subject would be more interesting; but I have found that my advice is never followed unless it happens to be the kind that the patient wants, especially when it affects the laws of affinity. In the advanced and long-standing case, we have in history data which will enable us to judge correctly the patient's ability to exercise. I consider therapeutic exercise a valuable method in judiciously selected cases.

DR. WILLIAM L. DUNN, Asheville, N. C.: It would be unfortunate if it should go out that this society looks with indifference on the marriage of the tuberculous. In giving exercise, the patient's original occupation should be considered, and the form of exercise be such as will enable him to prepare to resume it. In the early cases the patients should be rested even beyond the required limit, because it it important to see that a good result is obtained at the stage when it may be secured easily.

DR. F. M. POTTENGER, Los Angeles: The advice given in regard to marriage should depend, to a large extent, on the social status of the patient. We must recognize the fact that the tuberculous person has the same desires as others, and we must sometimes yield to them when we do not wish to do so. If general practitioners would take a careful history and examine the patient thoroughly for a week, they could make the diagnosis of probable tuberculosis in nearly every active case. Men not constantly doing this work are bound to be misled, if they rely solely on physical signs. Well-to-do persons have less chance of having their cases diagnosed in the incipient stage than the poor have, for a number of reasons.

DR. LOUIS V. HAMMAN, Baltimore: Some years ago I collected statistics of patients who showed slight apical abnormalities; and I found, five or six years afterward, that although they had lived under the ordinary conditions, very few had developed active tuberculosis. I believe that this type of persons are the ones who, when sent to sanatoriums, figure largely in the favorable results of these institutions. They would not have developed the disease if left at home. This has a tendency to make us overconfident in the results of treatment in early cases.

DR. C. L. MINOR, Asheville, N. C.: What we are trying to give is a rest-cure plus a work-cure, weaving the two together so as to get satisfactory results.

Air-Baths in Treating Tuberculosis

DR. CHARLES FOX GARDINER, Colorado Springs, Colo.: There are many days on which you cannot give both sun and air exposure. I have, therefore, invented an apparatus for giving air-baths in the room. It consists of a cage that fits over the bed and covers the patient, with the exception of his head. He lies on the bed naked, and the cage is covered with a sheet. A number of electric lamps are in the cage, and as many of these are lighted as are necessary to make the air sufficiently warm. The current of air is filtered through a three-ply screen of mosquito-netting. It is not necessary that it should be fresh air. The treatment tends to increase the blood-pressure and produce better metabolism. It is cheap and practical, can be used with sick patients, and does not depend on irregularities of weather conditions. Neither does it interfere with any other treatment you may wish to give.

DR. THOMAS DARLINGTON, New York: I should like to know whether the electric bulbs have an actinic effect. I think that a good deal of the effect of our municipal shower-baths is due to the cold air.

DR. GUY HINSDALE, Hot Springs, Va.: I believe that the principle of air-baths is one of the good elements in heliotherapy, supplementing the action of the sun-baths.

DR. C. F. GARDINER, Colorado Springs, Colo.: We do not get actinic rays from this type of lamp. I start with a temperature of about 90 degrees, and reduce it gradually to about 60.

The Incidence of Tuberculosis Among Potters

DR. H. R. M. LANDIS, Philadelphia: The dust of both clay and flint is gritty and somewhat irritating. While there has been very little histologic work done on lungs injured by these substances, a study has been made of those injured by coal-dust. The irritation is resisted for a time; but later, this resistance is overcome and the dust is carried into the lungs. Fibrous tissue is formed around these particles. This fibrous tissue is a protecting element against the entrance of tubercle bacilli. If such persons become tuberculous, it is usually after the common age period for that disease. There is also a tendency for such persons to live longer after acquiring tuberculosis than those who have not had this fibrosis beforehand. When they finally give up work, it is generally on account of dyspnea.

DISCUSSION

Dr. James M. Anders, Philadelphia: I have seen one such case in which the condition went on to actual cavity formation, yet no tubercle bacilli were found in the sputum. No matter how great the lesions in such cases, the diagnosis of tuberculosis cannot be made without the presence of the tubercle bacilli in the sputum.

Spontaneous Pneumothorax

Dr. Louis V. Hamman, Baltimore: I have seen a number of cases of pneumothorax coming on in otherwise healthy persons. In one case, this recurred once on the opposite side, and once on the same side. In four cases, the usual symptoms of pneumothorax were absent. They show how insidious the onset may be in some cases, and how easy it may be to overlook such a pneumothorax on casual examination, if this condition is not thought of. The cases ran a benign course, and the condition absolutely cleared up within a few weeks. They were probably due to adhesions of the pleura.

DISCUSSION

Dr. George W. Norris, Philadelphia: I am inclined to believe that this condition is not so rare as some suppose. A similar case that I treated cleared up in the same way.

Dr. G. Wilson, Baltimore: I had cases in two brothers. On bending over, they had pain. They walked to the office of their physician, who made a diagnosis and sent them to the state sanatorium. The sputum was negative in both cases, though their father had died of spinal tuberculosis. Both recovered completely and gained normal weight.

Dr. C. L. Minor, Asheville, N. C.: I have now under my charge a case of pneumothorax in a tuberculous patient, in which the prognosis is very grave. He came to me only because of shortness of breath, there being no pain; but I found the right lung infiltrated from top to bottom, and the left lung totally collapsed. It would be interesting to know whether cases of spontaneous pneumothorax are non-tuberculous or whether a large number of tuberculous cases have spontaneous pneumothorax, mostly unrecognized.

Dr. Robert C. Paterson, Ste. Agathe des Monts, Quebec: Two such cases came to my knowledge within two months of each other. One was tuberculous; in the other, there was slight thickening at the apex.

Dr. J. A. Miller, New York: I have seen only one case of recurrence in the same patient. After two recoveries, the condition recurred again. Fluid was withdrawn, and tubercle bacilli were found. Against the advice of his physician, a surgeon opened the chest. The cavity contained tubercle bacilli, but was sterile otherwise. Within a week after this, the patient developed sepsis and died. No necropsy could be obtained.

Dr. F. M. Pottenger, Los Angeles: I always suspect pneumothorax when there is a sudden shoot-up of a couple of degrees in the temperature. I consider this sign valuable in the diagnosis.

Dr. W. L. Dunn, Asheville, N. C.: For many years, I have examined all patients with the fluoroscope or a stereoscopic pair of plates, having examined in this way not less than two thousand patients; and it seems to me that the condition would have been rather frequently observed in these cases, if it were of frequent occurrence—certainly, if it is frequently associated with a small amount of disease.

Dr. L. V. Hamman: The commonest mechanism in the production of pneumothorax in early cases is the rupture of a small tuberculous lesion situated near the pleura, produced by the pulling of adhesions.

Heliotherapy in the Treatment of Bone and Joint Tuberculosis

Dr. John W. Brannan, New York: The treatment is begun with short exposures, until pigmentation of the skin appears. With the development of pigmentation, the cure progresses until complete. Pigmentation gives the skin resistance and favors cicatrization of wounds. At first, it was thought that heliotherapy could be carried out only at high altitudes, but later it was discovered that it is possible to carry it out at the sea level. At Sea Breeze, on Staten Island, the seat of the lesion is selected for the chief exposure. Other parts are also exposed, but entire exposure of the body is not often secured. A number of cases of sinuses of long standing have shown rapid improvement. The discharge may first be increased for a few days. Then a sequestrum of bone may be extruded, and finally the sinus closes. The general condition also improves greatly. Sometime it is necessary to interrupt the treatment, especially in blonde children, in whom pigmentation is of slow development. The best results are obtained with the smaller joints.

DISCUSSION

Dr. E. O. Otis, Boston: In 1912 I visted Rollier's sanatorium, and I never saw more healthy, rollicking children. Some of them had been operated on; but in every instance, their wounds were healing rapidly and their general condition was extraordinary.

Dr. C. L. Minor, Asheville, N. C.: Rollier always begins with the feet, wherever the trouble may be, and then gradually moves farther and farther up, until he exposes the whole body. I have not got beyond the knees, so far. It is very difficult, in this country, to get the opportunity to expose patients naked to the sun.

Dr. Thomas Darlington, New York: All these results were obtained where there is a great deal of moisture in the atmosphere. I do not believe they could be obtained, for instance, in Arizona, at a great elevation, with the strong direct rays of the sun, and with no moisture in the atmosphere. You can get too much sunlight.

Dr. C. F. Gardiner, Colorado Springs, Colo.: I have bee using heliotherapy at an elevation of 6,000 feet, where th air is very dry, and have had no difficulty. We have severa advantages in such a climate. There are more days o which we can expose the patients to the sun, and the rays that we receive are more efficient.

Dr. F. M. Pottenger, Los Angeles: In pulmonary cases I have made similar exposures, using a large mirror covered with blue glass to concentrate the sun's rays on a focus 6 or 8 inches in diameter. It seems to me that the light has some influence of value. I do not see why we should begin at the ankles. I have seen no bad effects from starting with the chest. I wonder whether it is true that pigmentation is a necessity for the success of this method of treatment.

Dr. Charles C. Browning, Los Angeles: By means of this mirror, the entire body can be exposed at once: the front to the direct rays of the sun; and the back, to the rays reflected from the mirror behind the patient.

Dr. G. V. Hinsdale, Hot Springs, Va.: It is a mistake to think that Rollier confines his attention to surgical tuberculosis, or tuberculosis of the joints. Almost half of his cases are pulmonary. It is remarkable that while such stress is laid on pigmentation as an index of the value of the treatment, negroes, who easily acquire tuberculosis, rarely recover. Whether they would under this sort of treatment, we do not know, but they have natural pigmentation.

Dr. Brannan: Although you may not obtain quite as good results at the seashore as at the mountains, you must use the facilities you have. Men have obtained better results with heliotherapy at the seashore than they had obtained before, without its use.

Blood-Pressure Studies, with Especial Reference to the "Energy Index" and the "Cardiac Load"

Dr. George W. Norris and Dr. J. R. Davies, Philadelphia: These clinical blood-pressure studies were undertaken, with a view of determining the possibility of estimating card efficiency by means of the two indexes mentioned abov The energy index is established by multiplying the combined systolic and diastolic pressure by the pulse-rate per minute. The cardiac load is estimated by dividing the diastolic into the pulse-pressure. We do not feel that either of these methods offers any special advantage over the routine examinations by other methods. The two methods differ, not only quantitatively, but also qualitatively. They are more valuable in the study of a given case than in contrasting cases. The observation of the diastolic pressure, which can be done very accurately by means of the auscultatory method, is more valuable than the observation of the diastolic pressure. The two, however, should be combined.

How Shall We Tell Whether the Myocardium Is Competent?

Dr. John M. Swan, Rochester, N. Y.: The following tests have been advocated: Taking the difference in the pulse-rate between the recumbent and the erect posture; taking the second phase (murmur phase) of the auscultatory blood-pressure observation; finding the increase in systolic blood-pressure on constricting the femoral arteries, and determining the cardiac efficiency factor of Tiegerstedt. I have endeavored, from these, to make a prognosis of the competency of the myocardium in a number of cases. From my studies of these cases, it seems to me legitimate to conclude that all four factors have some value in determining the efficiency of the myocardium. The cardiac efficiency factor of Tiegerstedt and the second phase of the auscultatory blood-pressure observation are the most important. A cardiac efficiency factor of 40 per cent. or over would seem to point to distinct myocardial inefficiency. A second phase of 30 per cent. or under would seem to indicate the same condition.

Influence of Pilocarpin on the Blood-Pressure

Dr. W. D. Robinson, Philadelphia: In intelligently selected cases of hypertension, pilocarpin has not failed to be of value. In many instances, indeed, it is of very great value. The therapeutic dangers usually accredited to this drug have not been encountered in the modified doses in which I have used it.

The Comparative Value of the von Pirquet and the Subcutaneous Tuberculin Tests in the Diagnosis of Tuberculosis in the Adult

Dr. Hugh M. Kinghorn, Saranac Lake, N. Y.: There are three kinds of reaction that may be obtained: a general reaction, focal reaction and a local reaction. The patient usually describes the general reaction as feeling like an attack of grip. The focal reaction always occurs, but is not always to be detected by the most minute examination. There is never any local reaction in a healthy person, and it may or may not occur in the tuberculous. It consists in swelling and redness. Without the presence of fever, we are not justified in saying that a general reaction has occurred. An elevation of 0.9 F. constitutes a definite tuberculin reaction. The von Pirquet cutaneous reaction is less specific in the adult than is the subcutaneous test. In children, however, the von Pirquet reaction is the one of choice. Koch's subcutaneous tuberculin reaction is specific. A positive subcutaneous reaction is of importance only in cases that are clinically suspicious of tuberculosis. In these cases, a positive reaction probably points to an active tuberculous focus. In the adult, the subcutaneous tuberculin test is the most reliable one and the one of choice, as all of the clinically suspected cases reacted to it; the von Pirquet test, although not so accurate, is of great importance. Eighty-one per cent. of the cases in which it was used reacted positively.

DISCUSSION

Dr. L. V. Hamman, Baltimore: I do not believe that the tuberculin test differentiates between tuberculous and healthy persons, if the term "tuberculous" is used in a clinical sense. The subcutaneous test is the most valuable.

Dr. F. M. Pottenger, Los Angeles: The tuberculin test is of value in the differentiation between active and inactive tuberculosis. I have found that in those cases in which, from a careful clinical history and physical examination, I have decided that active tuberculosis must be present, a prompt von Pirquet reaction followed in 30 per cent.

Dr. Cleaveland Floyd, Boston: The difference between the tests is merely a differentiation of the susceptibility of the patient to tuberculin. I do think you can say that you can tell active tuberculosis by one of these tests, and not by the other.

Dr. C. L. Minor, Asheville, N. C.: The von Pirquet test is considered to be an evidence of existing tuberculosis, but not of active tuberculosis. Its use is to be discouraged in adults.

Differential Diagnosis of Mild Thyroid Toxemia and Incipient Pulmonary Tuberculosis

Dr. C. G. Jennings, Detroit: Mild thyroid toxemia may closely resemble incipient pulmonary tuberculosis. The following symptoms are often common to both: mild chronic pyrexia, tachycardia, debility, shortness of breath, indigestion and cough. The differential diagnosis will be made by a study of the temperature curve, the peculiarities of the tachycardia, the nervous phenomena, the derangements of digestion and metabolism, the physical examination, and the roentgenographic findings.

DISCUSSION

Dr. J. M. Swan, Rochester, N. Y.: Disturbances of the ductless glands are quite common at Rochester, as it is only 6 miles from Lake Ontario. Diarrhea is a fairly common symptom among these patients, many of them losing weight; but there is no evidence of pulmonary involvement. I have found sirup of iodid of iron and quinin hydrobromate valuable remedies in these cases. I never use thyroid extract.

Current Medical Literature

AMERICAN

Titles marked with an asterisk (*) are abstracted below.

American Journal of Obstetrics and Diseases of Women and Children, York, Pa.

June, LXIX, No. 6, pp. 909-1140

1 *Review of Five Hundred Cases of Abdominal Cesarean Section for Eclampsia. R. Peterson, Ann Arbor, Mich.
2 Pathology and Treatment of Gonorrheal Cervicitis and Endometritis. J. G. Clark, Philadelphia.
3 Therapeutic Value of the Roentgen Ray and Radio-Active Substances in Carcinoma of Uterus. I. C. Rubin, New York.
4 Two Cases of Post-Partum Inversion of Uterus, with Discussion of Pathogenesis of Obstetric Inversion. W. C. Jones, Chicago.
5 When Is It Justifiable to Terminate Pregnancy before Third Month? What Should Our Attitude Be toward a Patient on Whom Criminal Operation Has Been Performed? Toward Those Suspected of Performance of Criminal Operations? W. R. Nicholson, Philadelphia.
6 Calcareous Shell in External Iliac Vein Twenty Years after Puerperal Phlebitis. G. E. Shoemaker, Philadelphia.
7 *Clinical Malignancy of Pseudomucinous Cystadenoma of Ovary. S. Wiener, New York.
8 Vesicovaginal Fistula in Child Eight Years Old: Spontaneous Cure Following Removal of Hairpin. I. C. Rubin, New York.
9 Unusual Case of Congenital Defect; Absence of Eyeballs. M. Strong, Omaha.

1. **Abdominal Cesarean Section for Eclampsia.**—The 500 cases of abdominal cesarean section analyzed by Peterson represent the work of 259 operators all over the world. Between 1908 and 1913 there were 283 cases of eclampsia treated by abdominal cesarean section with 73 deaths or a maternal mortality of 25.79 per cent. Up to 1908 there were 198 cases with 95 deaths or a mortality of 47.97 per cent. Peterson believes that the mortality percentage can be considerably lowered by care in technic and by not making use of the suprapubic route when there is great probability that the woman has been infected from below. Nearly one-fifth of the entire series, 91 operations, were performed by thirteen men having 5 or more cases to their credit, with 17 deaths or a maternal mortality of 18.68 per cent. Deducting 15 cases in which the proportion between moribund and septic patients was very high, the remaining 76 cases with 10 deaths give a maternal mortality of 13.15 per cent. Convulsions ceased after abdominal cesarean section in 251 out

of 457 cases or in 54.92 per cent. In 146 cases in which the convulsions ceased after abdominal cesarean section during the five year period (1908-1913) there were 41 deaths or a maternal mortality of 19.8 per cent. While the above percentage of patients died after emptying the uterus by abdominal cesarean section after cessation of the convulsions the mortality is much less than in those in which the convulsions continue, since in 130 of such cases there were 41 deaths or a maternal mortality of 31.53 per cent.

Peterson claims that the operative treatment of eclampsia has never been given a fair trial. To do this the uterus should be emptied quickly, as soon as possible after the onset of the first convulsion, not emptied after all kinds of medicinal treatment have been tried and failed. In the present series there were 25 deaths after 124 operations performed after one to five convulsions or a maternal mortality of 20.32 per cent. In 60 of the 124 cases in which the operations were performed after from one to five convulsions in which no or only one or two vaginal examinations had been made and in which no attempts were made to deliver from below there were only 9 deaths or a maternal mortality of 15 per cent. The increase in mortality due to delay is shown by a mortality of 30.33 per cent. in which the operations were performed after the sixth convulsion. This is 10 per cent. higher than after quick delivery and 5 per cent. higher than the total mortality resulting during the same period (1908-1913). In 60 cases in which the convulsions ceased after operations performed after from one to five convulsions there were 8 deaths or a maternal mortality of 13.33 per cent. The mortality is twice as high (26.92 per cent.) after the operations performed under the same conditions, except that the convulsions continued. When the abdominal cesarean sections were performed after more than five convulsions there was a resulting mortality of 26.31 per cent. in which there was cessation of the convulsions, 36.36 per cent. in which they continued.

Twins occurred 21 times in 500 cases of abdominal cesarean section for eclampsia or in 4.02 per cent. of the cases. This is over three times as frequent as are twins in normal cases. Excluding premature children and counting all children as living who survived one hour after delivery there were 9 deaths from 1908 to 1913 in which 248 children were delivered by abdominal cesarean section or a fetal mortality of 3.62 per cent. Under the same conditions the fetal mortality was 10.69 per cent., if children dying the first three days after delivery be counted among the deaths.

In 474 patients with eclampsia in the present series, 83.75 per cent. were primipara and 16.17 per cent multipara. In 225 primipara the maternal mortality was 24.44 per cent. while in 48 multipara the mortality was 27.08 per cent. The maternal mortality in eclampsia after abdominal cesarean section steadily increases with the age of the patients, it being 23.63 per cent. between the ages 16 and 20 and 31.11 per cent. between the ages of 31 and 35. The high death rate of abdominal cesarean section after operative procedures is shown by the fact that there were 10 deaths in 29 such cases, or a maternal mortality of 34.48 per cent. This 9 per cent. increase in mortality over the total mortality (25.79 per cent.) during the same period was undoubtedly due to sepsis, shock and delay in emptying the uterus. The mortality is distinctly higher after abdominal cesarean section in eclampsia if vaginal examinations have been made prior to the operations. The danger increases directly with the number of examinations made and the lack of asepsis employed.

7. **Pseudomucinous Cystadenoma of Ovary.**—One-third of all proliferating ovarian tumors Wiener states, are frankly malignant, the other two-thirds are all potentially malignant. The final estimation of malignancy must be clinical. The usual method in which histologically benign tumors cause death is by perforation of the capsule, extravasation of contents, and peritoneal metastases. Every ovarian tumor should be removed by laparotomy as soon as discovered, unless there be an absolute contra-indication to operation. Whenever at all feasible, cysts should be removed intact, without attempt at reduction in size by puncture. When spontaneous rupture of a cyst has occurred, the earlier the operation the better the prognosis. In removing a unilateral ovarian cyst, other than one which is frankly malignant or one which shows extensive papillomatous changes, the other ovary should be left *in situ* if its macroscopic appearance be normal. Every patient who has had a unilateral oophorectomy for cystadenoma should be subjected to periodical reexamination for disease of the remaining ovary.

American Journal of Public Health, Boston

June, IV, No. 6, pp. 477-552

10 Lead-Poisoning in United States. A. Hamilton, Chicago.
11 Industrial Hygiene. Neglected Field of Public Health Work. C. T. Graham-Rogers, New York.
12 Bacteriologic Standardization of Disinfectants. H. C. Hamilton and T. Ohno, Detroit.
13 Single Tax in Relation to Public Health. L. J. Johnson, Boston.
14 Wakefield and Stoneham Epidemic Sore Throat. F. L. Morse, Somerville.
15 Flies and Filth. S. Miller, Malden.
16 Outline Program for Teaching Sex Hygiene in Schools. R. N. Willson, Philadelphia.
17 Protest against 37 C. Requirement for Bacterial Counts. H. W. Hill, London, Ontario.

American Journal of Roentgenology, Detroit

April, I, No. 6, pp. 233-286

18 Roentgen Diagnosis of Gastric Ulcer. R. D. Carman, Richester, Minn.
19 *Chronic Typhoid Periostitis. H. W. Dachtler, Toledo, Ohio.
20 Roentgenograms W. H. Stewart, New York.
21 Roentgen-Ray Equipment and Work in Army at Present Time. W. A. Duncan, U. S. Army.
22 Possibility of Estimating Dosage and Penetration. W. S. Newcomet, Philadelphia.

19. Abstracted in The Journal, Nov. 8, 1913, p. 1742.

Annals of Surgery, Philadelphia

June, LIX, No. 6, pp. 805-991

23 *Prophylaxis of Cancer. W. J. Mayo, Rochester, Minn.
24 Two Fatal Cases of Systemic Blastomycosis. C. A. Powers, Denver.
25 *Value of Gluzinski's Test in Diagnosis of Gastric Ulcer. J. Nicolaysen, Christiania, Norway.
26 *Method of Subtotal Gastrectomy. F. T. Stewart, Philadelphia.
27 *Function of Gastro-Enterostomy Opening in Cases of Permeable Pylorus. H. Hartmann, Paris.
28 Chronic Pancreatitis. J. B. Deaver and D. B. Pfeiffer, Philadelphia.
29 Suggestions Regarding Anatomy of and Surgical Technic in Treatment of Jonnesco's Membrane. J. E. Summers, Omaha.
30 *Bullet in Pericardium. G. E. Armstrong, Montreal.
31 Fourteen Cases of Pulmonary Abscess and Bronchiectasis. H. Lilienthal, New York.
32 Two Cases of Visceral Pleurectomy for Chronic Empyema. C. H. Mayo and E. H. Beckman, Rochester, Minn.
33 Pleural and Pulmonary Complications of Tropic Abscess of Liver. Review of Twenty-Seven Cases. J. E. Thompson, Galveston, Tex.
34 *Causal Relation of Traumatism to Tuberculosis. J. C. DaCosta, *Philadelphia.*
35 *Uncomplicated Tuberculous Foci in Bones and Their Treatment. T. W. Huntington, *San Francisco.*
36 *Frontal Sinus Suppuration. H. A. Lothrop, Boston.
37 Blepharoplasty by Pregrafted Flap. C. Gibson, New York.
38 Successful Case of Ligation of Innominate Artery. C. A. Hamann, Cleveland.
39 Distant Results of Suture of Heart Following Wound by Pistol Shot. R. Proust, Paris.
40 Review of Ninety-Nine Arthrotomies for Fracture of Patella. H. B. Delatour, Brooklyn.

23. **Prophylaxis of Cancer.**—Mayo emphasizes the fact that preexisting lesions play the most important part of the known factors which surround the development of cancer, that such precancerous lesions are produced by some habit or life condition which causes chronic irritation, that where cancer in the human is frequent, a close study of the habits of civilized man as contrasted with primitive races and lower animals, in which similar lesions are conspicuously rare, may be of value, and finally, that the prophylaxis of cancer depends, first, on a change in those cancer-producing habits and, second, on the early removal of all precancerous lesions and sources of chronic irritation.

25. **Value of Gluzinski's Test.**—*Gluzinski's* working hypothesis is as follows: An ulcer situated in the pyloric portion being the cause of retention is, as a rule, accompanied

by hyperacidity of the contents, while a cancer is attended by a mucous (or atrophic) catarrh which causes a disappearance of the free hydrochloric acid. During the transformation of an ulcer into a cancer there will yet be found free hydrochloric acid up to a certain stage of the disease. But during the progress of the mucous catarrh there will occur a secretory insufficiency which may be demonstrated by giving two test-meals, one meal following immediately on the other. The stomach is washed out before and after the first meal and the second meal is given immediately after the second washing. In ulcer both the breakfast as well as the dinner give distinct reaction of free HCl. In beginning cancer the first meal also will give distinct reaction of free HCl, while the second one will show only a slight trace, or free HCl will be altogether absent.

Kocher by determining the percentage of free HCl in the two meals found that the free acid is present in larger quantities after the second meal in ulcer, while in cancer this meal (the test dinner) shows the lowest percentage of hydrochloric acid. In 30 cases of ulcer tested according to this modified Gluzinski method, the diagnosis was verified at operation in 27 cases, in 2 cases the result was uncertain and in 1 case there was found carcinomatous degeneration of an ulcer.

At the surgical clinic of Christiania University Nicolaysen has employed the Gluzinski method since October, 1912, in the examination of 86 cases, to wit: 25 cases of gastric ulcer, 9 cases of duodenal ulcer, 21 cases of cancer of the stomach, 15 cases of gastro-enteroptosis, 11 cases of chronic appendicitis and 5 cases of gall-stones. The diagnosis is in all of the cases controlled by operation, some of the ptosis cases only by roentgenogram. Of the cancer cases two only had free hydrochloric acid and in both the test agreed with the results as obtained by Gluzinski, to wit: a decreasing amount of free hydrochloric acid in the test dinner. In those cases of cancer of the stomach where free hydrochloric acid was absent Nicolaysen found no regular decrease of the total acidity; in fact, the total acidity was increasing in the second test-meal in about 50 per cent. of the cases.

During further examinations he arrived at the conclusion, however, that the percentage of free HCl may decrease in the second meal also in diseased conditions of the gastro-intestinal canal other than cancer of the stomach.

He found the free hydrochloric acid values to be diminishing in the test dinner in cases of gastro-enteroptosis. By examining 25 cases of gastric ulcer he found that all of them but one reacted in the manner described by Gluzinski and Kocher as being characteristic of ulcers of the stomach, to wit: with a decided increase in the percentage of the hydrochloric acid and of the total acidity. In 9 cases of duodenal ulcer the hydrochloric acid values were not as high as in gastric ulcer and the increase in the percentage of free acid in the second meal was moderate in 7 cases, while it was relatively great in two cases.

But the difference in this respect between gastric and duodenal ulcer is not great enough to be made use of as a means of differential diagnosis. In Nicolaysen's opinion Gluzinski's method is better than any other for testing the secretorial function of the stomach.

26. **Subtotal Gastrectomy.**—The method of subtotal gastrectomy described by Stewart consists in removing the diseased segment of stomach from left to right, after performing an end-to-side anatomosis between the lower portion of the incision, which amputates the stomach and the upper part of the jejunum, the operation being so conducted that the suturing necessary to unite the stomach to the intestine is completed before either viscus is opened.

27. **Gastro-Enterostomy with Permeable Pylorus.**—Dog experiments and roentgenographic examinations by Hartmann showed that, in opposition to the general opinion, the gastro-intestinal anastomosis may work even in cases in which the pylorus is patulous.

30. **Bullet in Pericardium.**—In the case cited by Armstrong the assailant used a 32 caliber revolver and stood in front of the patient and about 5 feet away. The patient was dazed for a moment and then recovered and pursued his assailant, but was unable to run far on account of weakness. There was a small punctured wound opposite to the third intercostal and slightly to the left of the border of the sternum, no staining or charring of the skin and but little tenderness on pressure, no discharge from the wound and very little discomfort on taking a full breath. The chest was emphysematous, but there was no evidence of pneumothorax or of air or blood in the pericardium, no murmurs nor friction rub. A fluoroscopic examination of the chest showed the bullet lying loose in the pericardium, moving with each heart beat, and changing its position with the changing position of the patient. During the succeeding four or five days, the only changes to be noted were increasing irregularity of the pulse and a change in his general condition. The temperature elevation was not great, a hundred and two-fifths was the highest. The change in the pulse was definite. It became more rapid, more irregular, and smaller and more compressible. A tracing showed complete auricular fibrillation. A radical tracing showed an irregularity both in volume and rhythm. In the afternoon of the fifth day Armstrong removed the bullet.

Throughout the operation the pulse retained the same characteristics and a rate of 130 to 140, varying slightly throughout the anesthesia. After the bullet was removed and before the pericardium was sutured the pulse obviously quieted and the rate was 120 at the carotid. Two and a half hours after the operation the pulse was 105 and perfectly regular. Armstrong emphasizes the following points: 1. Onset of auricular fibrillation in a heart where, as far as could be ascertained, there had been no previous inflammatory mischief, no symptoms of any cardiac involvement, due to the presence of a foreign body. 2. Cessation of the disorderly rhythm on the removal of the cause—the bullet.

34. **Traumatism and Tuberculosis.**—DaCosta believes that it is as certain as many things medical can be that traumatism is often a determining cause of bone and articular tuberculosis and sometimes of tuberculosis in other regions. He has seen many cases which he regards as traumatic tuberculosis of bones and of joints, and a number of cases of traumatic tuberculosis of tendon sheaths. He has also seen a number of cases of traumatic tuberculosis in the knee, foot and wrist, and several in the hip. He has seen tuberculosis of the inguinal glands after a kick, tuberculosis of the epididymis after a bruise, tuberculosis of the kidney after contusion of that organ, and tuberculosis of the mammary gland after a blow. To deny the possibility of traumatic tuberculosis, he states, is to deny many of the truths of pathology and some of the plainest lessons of clinical surgery.

35. **Tuberculosis Foci in Bones.**—To leave an accessible tuberculous bone focus, whether isolated or not, to smoulder until provoked to renewed activity at a later period, Huntington states, is without justification, and seems to do violence to surgical principles. He insists that in the acute, fulminating cases delay for any purpose is extremely hazardous, and that to this type, if to no other, early incision and evacuation offers peculiar advantages. The objects to be obtained by early, direct interference are: (*a*) permanent cure by elimination of the focus; (*b*) reduction of time of treatment from years to months; (*c*) prevention of complications, such as abscess formation, mixed infection, disintegration of bone and joint strustures, crippling deformity and loss of function; (*d*) avoidance of systemic invasion and loss of life. If the disease has extended from its original location across the epiphyseal cartilage not much respect need be paid to it; if in the remote side it will naturally be preserved. Utmost care must be exercised to avoid perforation of the cortex so as to communicate with the synovial cavity.

The resulting chamber may be dealt with variously. Huntington has generally depended on camphor phenol gauze packing (phenol one part, gum camphor three parts). The gauze is wrung dry and closely packed into the cavity. A few days later the amount of gauze is lessened and a little later is discarded. Such wounds heal rapidly and all discharge ceases in less than a fortnight under an aseptic dressing. After removal of the initial dressing the cavity is usually free from blood, and can be filled with Beck's paste or the Mosetig-Moorhof wax. The wound may then be closed in the usual manner and fixation secured by a rather loosely applied plaster-of-Paris dressing. Huntington reports sixteen cases in which he has pursued the plan described.

36. **Frontal Sinus Suppuration.**—After the vicinity of the ostium has been enlarged to as great an extent as the anatomy will allow, Lothrop sutures the edge of the skin of the upper lid to the periosteum on the outer edge of the bony opening into the sinus with small catgut; then an oval incision is made in the lid down to the muscle fibers, so as to form a flap about the size of the opening in the bone. The blood-supply of the lid is excellent and the flap is very movable so that it turns readily without much cutting after division of the thin skin of the lid. The flap is now to be turned so as to cover the bony opening and is sutured to periosteum, preferably with fine chromicized catgut. Then the parts are washed carefully with a sterile solution and the remaining wound is closed. The lid is drawn across horizontally and there is very little tension and subsequent edema, and the motion of the lid is not interfered with. In two instances where the sinus was grafted, the scar is scarcely perceptible in one and in the other the depression is moderate and is due to the previous extensive destruction of bone.

Archives of Pediatrics, New York

June, XXXI, No. 6, pp. 401-480

41 Organized Cooperation in Infant-Welfare Work. G. Smith, New York.
42 Still's Disease and Arthritis Deformans. J. B. Manning and F. J. Fassett, Seattle, Wash.

Arizona Medical Journal, Phoenix

June, II, No. 5, pp. 5-15

43 Tuberculosis and Protein Sensitization. A. D. Wilson, Prescott.

Boston Medical and Surgical Journal

July 9, CLXXI, No. 2, pp. 49-88

44 *Acute Abscess and Gangrene of Lung. I. J. Walker, Boston.
45 Scabies in Boston. F. M. Painter, Boston.
46 Anatomy and Physiology of Seminal Vesicles with Regard to Treatment of Their Lesions. W. C. Quinby, Boston.
47 *Pathology of Seminal Vesicles.* J. D. Barney, Boston.
48 *Arthritis Associated with Lesions of Genito-Urinary Tract.* E. G. Brackett, Boston.
49 Three Cases of Erythema Group. H. Morrison, Boston.

44. **Acute Abscess and Gangrene of Lung.**—The following statistics on abscess and gangrene of the lung are the result of a review of the literature of the last ten years by Walker. Total number of cases of acute abscess of the lung, 132; males, 98; females, 32; sex not mentioned, 2. Total number of cases of acute gangrene, 40; males, 27; females, 5; sex not mentioned, 8. Average age in cases of acute abscess, 24.5 years; in cases of acute gangrene, 38.6 years. In acute abscess of the lung, the right side of the chest was involved in 60 cases, the left in 45, both sides in 5 cases; side not mentioned in 22 cases.

In gangrene, the right side of the chest was involved in 21 cases, the left side in 9 cases, both sides in 2 cases; sides not mentioned in 8 cases. In acute abscess the lobes were found to be involved as follows: upper, 21 times; lower, 76 times; middle, twice; both upper and lower, 5 times. In 28 cases the lobe was not mentioned. In acute gangrene: upper, 10 times; lower, 24; middle, none; both upper and lower, 6 times. In acute abscess cases, adhesions were present in 63, absent in 2, not mentioned in 57. In acute gangrene, they were present in 17 cases; not mentioned in 23 cases. In 104 cases of acute abscess the lesions were single, multiple in 16, not mentioned in 12. The mortality in cases of acute abscess treated medically was 54 per cent.; in those treated surgically, 25 per cent. The mortality in cases of gangrene treated medically in 89 per cent.; those treated surgically, 44 per cent.

Cleveland Medical Journal

June, XIII, No. 6, pp. 375-446

50 Neanderthal Man. T. W. Todd, Cleveland.
51 Labeling Vice. S. W. Kelley, Cleveland.
52 *Abderhalden Serologic Test for Pregnancy—Preliminary Report of One Hundred and Fifty Cases. W. C. Stoner and A. J. Skeel, Cleveland.
53 Two Cases of Cardiospasm. J. D. Osmond, Cleveland.
54 History of Physiology of Nervous System. R. G. Pearce, Cleveland.
55 Atresia Rectovesicalis—Report of Successfully Operative Case. F. C. Herrick, Cleveland.

52. **Abderhalden Test for Pregnancy.**—Of 78 cases examined by Stoner and Skeel in which a clinical diagnosis of pregnancy was established, only one reacted negatively. The blood was obtained throughout the pregnant period from one month up to full term. Of 8 post-partum cases in which the blood was obtained from one day to three weeks subsequent to delivery, all reacted positively. Of 68 non-pregnant cases, 8 were clinically diagnosed cancer, 6 of which gave a positive reaction to both placental and cancer tissue and 2 gave a negative reaction to both. Two cases of fibroid tumor of the uterus were positive and one was negative. The non-pregnant cases included a variety of clinical conditions aside from cancer, fibroid tumor and pelvic inflammatory cases, all of which gave negative reactions, save four cases in which the control tube gave a reaction also, showing faulty technic in the way of old blood, unclean glassware and failure to use toluol. Four urines of pregnant patients gave reaction in No. 1, and two tubes, but No. 1 tube was much more intense, showing the presence of a normal dialyzable protein in urine and probably a ferment due to pregnancy. Pregnant rabbit blood on both human and rabbit placenta was positive and non-pregnant rabbit blood on human placenta was negative. Eleven cases were syphilitic and gave a positive Wassermann, but the Abderhalden was negative. Eclampsia and threatened eclampsia cases showed positive reactions with usual intensity.

Colorado Medicine, Denver

June, XI, No. 5, pp. 213-242

56 Surgical Treatment of Thoracic Empyema. C. E. Tennant, Denver.
57 Art of Obstetrics among Primitive Peoples and Its Development among Civilized Classes. C. B. Ingraham, Denver.
58 Acapnia—Its Relation to Anesthesia and Surgery. C. G. Parons, Denver.
59 *Anesthetization*—Anesthetizer and Surgeon. R. L. Charles, Denver.

Delaware State Medical Journal, Wilmington

May, V, No. 6, pp. 1-26

60 *How Should We Advise Our Ruptured Patients?* B. R. Veasey, Wilmington.

Journal-Lancet, Minneapolis

July 1, XXXIV, No. 13, pp. 347-370

61 *Experimental Data on Intramuscular Administration of Antisyphilitic Drugs. H. E. Robertson, *Minneapolis.*
62 Incubus *Nocturnus: Leaf from Doctor's Day-Book.* D. V. Gleysteen, Lamberton.
63 Shakespeare as Physician. H. E. Day, Minneapolis.
64 *Case of Retractile* Mesosigmoiditis. F. R. Wright, Minneapolis.

61. **Intramuscular Administration of *Antisyphilitic* Drugs.**—Robertson states that intramuscular injections of salvarsan and neosalvarsan uniformly produce severe destructive lesions which always heal slowly and often are complicated by hemorrhages and sloughing abscesses. The severity of the reaction from the use of either drug is essentially the same. Salvarsan always leaves an insoluble pigment which acts as a foreign body. Mercurical preparations when injected into muscles produce similar lesions. The lesions produced by experiments on animals and in human beings are similar in every respect. Robertson regards the use of such preparations in this manner as an unjustifiable procedure in certainly the majority of cases.

Journal of Nervous and Mental Disease, Lancaster, Pa.

June, XLI, No. 6, pp. 345-416

65 Dementia Praecox in Eighth Edition of Kraepelin's Text-Book. H. D. Singer, Hospital, Ill.
66 Case of Aneurysms of Vessels of Brain. J. H. W. Rhein, Philadelphia.
67 Case of Progressive Lenticular Degeneration. E. M. Auer, Kalamazoo, Mich.

Kentucky Medical Journal, Bowling Green

June 15, XII, No. 12, pp. 365-398

68 Manual Removal of Placenta and Membranes. W. B. Gossett, Louisville.
69 Surgical Judgment in Operations for Acute Mastoiditis. G. C. Hall, Louisville.
70 Excision of Tarsal Cartilage and Conjunctiva in Old Trachoma. C. T. Wolfe, Louisville.
71 Vesical Calculi. Report of Case. E. S. Allen, Louisville.
72 Fracture of Pelvis and Separation of Sacro-Iliac Joint. W. B. Owen, Louisville.
73 Ruptured Ovarian Cyst. Report of Case. B. F. Zimmerman, Louisville.
74 Fracture of Internal Condyle of Femur Treated with Wire Nails. Report of Case. C. B. Spalding, Louisville.
75 Eclampsia. Report of Case. B. J. O'Connor, Louisville.
76 Two Cases of Hodgkin's Disease. F. C. Askenstedt, Louisville.
77 Typhoid. J. F. Adams, Bagdad.
78 Relationship of Physician to Public. W. F. Boggess, Louisville.

Maine Medical Association Journal, Portland

June, IV, No. 11, pp. 1883-1923

79 Feeding of Infants and Some Diseases of Gastro-Enteric Tract in Infancy. J. L. Morse, Boston.
80 State Care and Training of Feeble-Minded in Maine. C. J. Hedin, West Pownal.
81 Penetrating Gunshot Wound of Gravid Uterus. Case-Report. R. A. Holland, Calais.

Medical Record, New York

July 11, LXXXVI, No. 2, pp. 49-94

82 *Treatment of Diseases of Vegetable Parasitic Origin by Deep Muscular Injections of Mercury. B. L. Wright, U. S. Navy.
83 Some Radium Therapeutics. J. B. Bissell, New York.
84 Cow's Milk, Raw and Heated. E. W. Titus, Washington, D. C.
85 Pharyngeal Tonsil in Adult. L. G. Kaempfer, New York.
86 Case of Auricular Flutter Occurring During Rheumatic Endocarditis. S. Neuhof, New York.
87 Modified and Conservative Radical Mastoid Operations for Tolerance of Prostheses in Cases of Diminished Hearing after Middle-Ear Suppuration. W. S. Bryant, New York.
88 Mental and Nervous Manifestations of Pellagra. T. Frazer, Asheville, N. C.
89 Physiology of Abderhalden's Test and Its Value in Determination of Pregnancy with Table of Ninety Cases. K. H. Goldstone, Brooklyn.

82. Treatment of Diseases of Vegetable Parasitic Origin with Mercury.—On the basis that mercury is the chemical affinity of the entire group of the vegetable parasites, Wright advises its use in various conditions. In the early days of an acute infectious disease Wright states the maximun dosage of mercuric succinimide is solely indicated, while in the late days of these diseases, or in subacute or chronic infections smaller and more numerous injections are to be used. During the early days of an average acute infection in an average adult male, the initial dose of mercuric succinimide should be gr. 9/5; if at the end of twenty-four or thirty-six hours there has been no improvement, or if, following improvement, there has been a return of symptoms, a second injection of from gr. 5/5 to gr. 6/5 should be given, providing symptoms of mercurialism have not followed the first injection. In the more virulent and quickly fatal of the acute infections, such as meningitis, whatsoever its etiology, the initial dose should be gr. ii. In chronic infections (late days of acute and in subacute infections) in the average adult male the initial dose should be gr. 5/5 to gr. 7/5. Succeeding injections should then be given with from two to four day intervals, in such dosage as will not produce mercurialism, until ten or twelve injections have been given, providing the symptoms have not disappeared in the mean time. When ten or twelve injections have been given, the treatment should be interrupted for from two to five weeks, in order that the mercury may be eliminated and that the organisms may not become immune to its action through its constant presence in their environment.

In some of the more persistently chronic infections the interval of time between injections should be from four to eight days. In females the dosage should average from gr. 1/5 to gr. 2/5 less than in males. Should symptoms of mercurialism appear at any time during the course of treatment the injections should be stopped at once and appropriate corrective measures applied, the injections being resumed if necessary on the disappearance of these symptoms.

During this treatment the oral cavity and the teeth must have the utmost attention and be kept perfectly clean at all times, and the bowels moved freely daily. Surgical asepsis must be carefully observed in every particular relating to syringe, needles, solution and skin at site of injection.

The solution should be made of the strength of mercuric succinimide gr. 1/5 in sterile, distilled water ♏iv. Inject deeply in gluteal muscles. The only contra-indication to this method that Wright knows of is serious organic lesions of the kidneys. He has used this method of treatment in 35 cases of tuberculosis, 9 cases of lobar and 6 cases of lobular pneumonia; 5 cases of typhoid, 1 of paratyphoid, 1 of meningitis, 2 of erysipelas, 39 cases of infectious arthritis, 24 of gonorrheal arthritis and 7 of chronic articular rheumatism.

New Mexico Medical Journal, Las Cruces

June, XII, No. 3, pp. 63-100

90 Constitution of Proteids. E. S. Bullock, Silver City.
91 Management of Woman and Child during Puerperium. W. P. Mills, East Las Vegas.
92 Vincent's Angina. H. Letord, El Paso, Tex.
93 Final Report on Epidemic of Typhus Fever among Navajo Indians at Canoncito Cojo. L. C. Day, Albuquerque.

New Orleans Medical and Surgical Journal

June, LXVI, No. 12, pp. 883-1008

94 Philosophic Anatomy of Kidneys. E. Souchon, New Orleans.
95 Operative Treatment of Jacksonian Epilepsy. C. W. Allen, New Orleans.
96 Epidemiology of Whooping-Cough. H. D. King, New Orleans.
97 Cases of Obstruction of Bowels. E. D. Martin, New Orleans.

July, No. 1, pp. 1-94

98 Gunshot Wounds of Abdomen. L. B. Crawford, New Orleans.
99 Postoperative Management of Surgical Cases. E. D. Martin, New Orleans.
100 *Mosquitoes. Rôle of Certain Species in Prevention of Malaria. H. Byrd, Princeton, Fla.
101 *Remedy for Boils and Skin Infections. C. W. Allen, New Orleans.

100. Mosquitoes. Rôle of Certain Species.—Other things being equal, Bryd states, the prevalence of malaria in a given locality bears an inverse ratio to the abundance of salt-marsh mosquitoes. This proposition has two important corollaries: (a) That in Florida, at least, in which nearly all cases of typhoid are the result of fly convection, this disease is reduced to a marked degree by the prevalence of salt-marsh mosquitoes; for protection against mosquitoes gives partial protection against flies. (b) In which other species of mosquitoes that do not transmit disease prevail in such numbers, and with such ferocity, as to cause the inhabitants to resort to efficient screening, and other protective measures, the prevalence of malaria and of typhoid are reduced accordingly. A notable example of this is found in Lake County, about Eustis and Tavares, in which the *Culex perturbans* is at times a veritable pest. Here there is such freedom from malaria that there is a wide-spread belief, or at least was four or five years ago, that people will not take malaria in districts in which there are pines.

101. Remedy for Boils and Skin Infections.—In his own case Allen used a freshly prepared dilute nitro-muriatic acid, 10 to 15 drops in water after each meal. In a few days he could note some apparent improvement and soon realized that he was getting better; well-developed lesions soon disappeared and those in process of development were aborted. During its use Allen has seen many lesions started in a hair follicle, which in the past would have promised much trouble for him, disappear in a few days. He is also thoroughly convinced of one other fact, contrary to the usually accepted surgical views, which is that boils and superficial skin infections do better when not opened. Should they come to a head and point they can easily be evacuated but their incision accomplishes nothing in shortening their course or lessening their pain; on the contrary, it seemed at times to prolong their duration and to add to the violence of the inflammatory reaction.

New York Medical Journal

July 11, C, No. 2, pp. 61-108

102 Treatment of Summer Diarrheas of Children. F. M. Crandall, New York.
103 Obstetric Paralysis. T. T. Thomas, Philadelphia.

104 Transplantation of Testicle from Dead to Living Body. G. F. Lydston, Chicago.
105 Plea for Saner Methods in Treatment of Pulmonary Tuberculosis. T. J. Mays, Philadelphia.
106 Myasthenia Gravis. Report of Case. S. P. Goodhart, New York.
107 Combined Fracture and Orthopedic Operating-Table. C. H. Sanford, New York, and H. Fitz-Simmons, Boston.
108 Hygiene of Nutrition. H. P. De Forest, New York.
109 Physiologic Treatment of Catarrhal Deafness. A. C. Geyser, New York.
110 Hereditary Cerebellar Ataxia. S. A. Blauner, New York.
111 Hour-Glass Contraction of Uterus Following Use of Pituitary Extract. T. H. Cherry, New York.

Ophthalmic Record, Chicago

June, XXIII, No. 6, pp. 271-324

112 Phlyctenular Conjunctivitis; Its Importance in Conservation of Vision. B. W. Key, New York.
113 Ocular Rotations. F. Valk, New York.
114 Points Relative to Enucleation of Eyeball and Sympathetic Inflammation. E. R. Carpenter, El Paso, Tex.
115 Binocular Vision and Optic Chiasm. A. T. Poffenberger, Jr., New York.

FOREIGN

Titles marked with an asterisk (*) are abstracted below. Single case reports and trials of new drugs are usually omitted.

British Medical Journal, London

June 27, I, No. 2791, pp. 1393-1440

1 Adrenals. T. R. Elliott.
2 *Clinical Aspects of Body Temperature in Childhood. T. R. C. Whipham.
3 Vicious Circles of Neurasthenia. J. B. Hurry.
4 Internal Secretions and Dental Caries. H. P. Pickerill.

2. **Body Temperature in Childhood.**—A child whose temperature is raised, Whipham states, should be put to bed and be lightly but efficiently clothed. Plenty of fresh air may be allowed, but at the same time precautions must be taken to protect the patient from draughts. In hot weather a bed-cradle may be used to keep the weight of the bedclothes off the child's body, and thus add to its comfort. As a general principle the treatment should begin with a purge. A small dose of calomel, followed by castor-oil, is nearly always beneficial. It not only clears out the intestinal tract, but also serves to reduce the fever, whatever may be its cause. In cases in which the alimentary tract is involved special attention must, of course, be paid to such symptoms as constipation, vomiting and diarrhea, but even when some other part is at fault the excretory functions must always be regulated by appropriate means. Methods to reduce the temperature, should be deferred until a diagnosis of the case has been made, unless the child is extremely restless or shows other signs of distress; then the bath is the safest and the most efficacious method.

Older and sturdy children may be immersed in a cool bath at about 80 F., or the temperature of the water may be gradually lowered from 100 F. by the addition of ice. The body and head should be sponged freely, and after five or ten minutes the child should be dried quickly, and wrapped in a warm blanket. Young children and infants, however, especially those who are weakly, do not stand cold water well, and the same applies to the cold pack. The shock to the nervous system is too great, and harm or even death may ensue. For such children a warm or tepid bath should be employed at a temperature not lower than 90 F. If for any reason a bath is impracticable or inadvisable, sponging with tepid water, or equal parts of alcohol or vinegar and water, may be used. An alternative method is that of evaporation. The body is loosely wrapped in one or two layers of gauze, which is moistened from time to time with water 115 F., evaporation all the while being promoted by means of a fan. The feet at the same time should be kept warm by the application of hot-water bottles. This may be continued for a quarter or half an hour. By these means the body temperature is reduced, often to a marked degree, and the nervous system is soothed. Frequently, too, the child rapidly falls into a refreshing sleep. In cases of continued fever, or cases in which there is evidence of meningitis, an ice-bag lightly applied to the head is of value, but this, again, must be used with caution in the case of infants as the continued cold is liable to cause a subnormal temperature. Its use, therefore, should, as a general rule, be restricted to rather older children. Antipyretic drugs are rarely necessary in early life, and should not be given merely with a view to reducing the temperature. In a general way the usual symptoms of fever may be allayed by a mixture containing citrate of potassium or magnesia and liquor ammonii acetatis. For older children this may be made to effervesce; it is palatable, cooling and helps to check the thirst.

As a rule the patient may be allowed to drink freely and in the case of infants suffering from diarrhea, infusions of normal saline solution under the skin are of great benefit. In the case of infants milk should be withheld and albumin water alone given for twenty-four or thirty-six hours at least, as in them intestinal toxemia is the commonest cause of fever, and must either be treated or excluded before the child is allowed to return to a milk diet. For children above 3 years of age a fluid diet, consisting largely of milk, should be ordered. As a rule the food should be given cold, and, if there is vomiting it may be iced. In respiratory diseases, however, it is often best to give the food slightly warmed, and in cases of collapse hot milk acts as a useful stimulant. Regular feeding in cases of prolonged pyrexia is a necessity in order to maintain the patient's strength, but, if possible, feeding should take place during a remission of the temperature; at other times only water or stimulant in the form of alcohol should be given. It is essential that the patient should not be awakened from sleep in order to be fed, unless there is excessive drowsiness or stupor, in which case the child must be roused at intervals, as otherwise sufficient nourishment will not be taken. In transient fevers children may go without food until the temperature falls, though water may be given freely. Prolonged pyrexia, on the other hand, is debilitating, and requires generous but careful feeding.

Dublin Journal of Medical Science

June, III, No. 510, pp. 401-480

5 Retrospect of Vital Statistics in Ireland. W. J. Thompson.
6 Leukosarcomatosis. W. D. O'Kelly.
7 Relationship between Chorea and Rheumatism. A. P. Draper.

Indian Medical Gazette, Calcutta

June, XLIX, No. 6, pp. 213-252

8 Thousand Cataract Operations Performed in Six Weeks at Shikarpur, North Sindh. H. T. Holland.
9 Two Years' Experience of Extraction of Cataract in Capsule with Notes on 1,137 Consecutive Operations. R. Baird.
10 Irrigation, after Extracapsular Extraction of Cataract. E. A. R. Newman.
11 Thyroid and Some Cases of Hypothyroidism. C. Milne.
12 Catarrhal Jaundice in Calcutta. A. Caddy.
13 Case of Ruptured Spleen: Splenectomy: Recovery. F. A. L. Hammond.
14 Case of Rupture of Spleen. C. L. Gosain.
15 Cases Treated in Ripon Hospital, Ahmednagar. C. Maddock.
16 Peritoneal Cyst of Traumatic Origin and Other Cases. F. E. Wilson and C. H. Barber.
17 Case of "Simple, Non-Infective" Thrombosis. G. D. Franklin.
18 Case of Psoas Abscess Treated by Injections of Pneumococcal Vaccine. W. O. Walker.

Journal of State Medicine, London

July, XXII, No. 7, pp. 385-448

19 *Human and Bovine Tuberculosis. Treatment by Special Kinds of Tuberculin. N. Raw.
20 Feeble-Minded Children. M. Dendy.
21 Dental Clinics. L. Williams.
22 Medico-Pedagogic Methods in Primary School Education. J. Arrowsmith.

19. **Human and Bovine Tuberculosis.**—Raw has been impressed with the fact that children who suffer from the surgical forms of tuberculosis, such as tuberculous glands, joint diseases and lupus, very rarely indeed are attacked even in the later stages of their malady, by phthisis pulmonalis. The lungs may be affected in the course of a general miliary tuberculosis, but it is rare to see phthisis pulmonalis associated with surgical tuberculosis. The cause of death in the great majority of these cases is exhaustion and waxy degeneration, so that Raw has come to the conclusion that these two varieties of tubercle are antagonistic to each other in the human body, and that children who have suffered from

bovine tuberculosis in the form of strumous glands, spinal caries, strumous joints and lupus are immune against phthisis pulmonalis. He believes that tubercle bacilli of the *typus humanus* produce phthisis pulmonalis, ulceration of the intestines and tuberculous laryngitis; whereas, tubercle bacilli of the *typus bovinus* produce tuberculous peritonitis, tuberculosis of the lymphatic glands, tuberculous bones and joints, tuberculous meningitis (probably) and lupus. In his opinion acute miliary tuberculosis is of bovine origin.

Journal of Tropical Medicine and Hygiene, London

June 15, XVII, No. 12, pp. 177-192

23 *Case of Osteoperiostitis Developing after Probable Attack of "Febris Columbensis." A. Castellani.

23. Osteoperiostitis Developing after "Febris Columbensis."—In a case of chronic osteoperiostitis developing after an attack of continuous fever said to have lasted six weeks, a microorganism was isolated by Castellani from the pus with all the characters of *B. columbensis*. The blood of the patient agglutinated the strain isolated from the pus as well as all the strains of *B. columbensis* kept in the laboratory, including the original one isolated in 1905. There is little doubt in Castellani's opinion that this germ was the cause of the osteoperiostitis, and that the fever from which the patient states he suffered before the periostitis developed, was, according to all probabilities, an attack of "febris columbensis."

Lancet, London

June 27, I, No. 4739, pp. 1799-1862

24 Hygienic Aspect of Coal-Mining Industry in United Kingdom. F. Shufflebotham.
25 *Treatment of Leprosy by Intravenous Injections of Iodoform. B. J. Courtney.
26 Some Cases of Traumatic Hysteria. J. W. G. Grant.
27 Mental Symptoms Associated with Exophthalmic Goiter. W. Leggett.
28 Case of Fibrosis of Lung Treated with Bacillus Friedlander Vaccine. A. Sandison.
29 Case of Acute Non-Calculous Cholecystitis in Child. F. C. Pybus.
30 Case of Gall-Stone Causing Intestinal Obstruction. S. Wickenden.

25. Treatment of Leprosy by Iodoform.—Of the 12 patients on whom the treatment was tried by Courtney for three months or longer, 4 were of the purely nodular type, 5 were of the purely anesthetic type, and 3 were of the mixed type. As regards the duration of the disease at the time treatment was commenced, the shortest was two years and the longest seventeen years. To begin with ½ grain of iodoform was given twice a week; this was gradually increased up to 1 grain given five times a week. A ½-grain tablet of iodoform is thoroughly powdered and put into an all-glass hypodermic syringe, 3 minims of liquid paraffin and then 7 minims of ether are drawn into the syringe, the needle is sealed with lanolin to prevent evaporation of the ether, and the syringe is then shaken until all the iodoform has been dissolved. The skin of the patient's arm having been washed with an antiseptic lotion and sponged with ether, a tourniquet is applied above the elbow sufficiently tight to obstruct the venous but not the arterial circulation, and the contents of the syringe are injected into the median basilic or median cephalic vein. In addition to the intravenous injections in four cases a local reaction was aimed at also—that is to say, the solution of iodoform was injected into the substance of the nodules, the amount varying from 10 to 30 minims of the solution according to the size of the nodule. Four or five nodules were treated in this way at the same time, and when the resulting ulceration had healed another 4 or 5 were injected, and so on. All the patients were examined for the presence of lepra bacilli, the fluid being taken from a nodule when such was present, and failing this the nasal secretion was examined, and the number and effect on the bacilli were observed from time to time during the course of the treatment. The bacillus was found in all the tubercular and mixed cases, but in only one of the anesthetic cases.

The results are classed as follows: (a) Effects on tubercular cases.—Of this variety 4 patients were treated, 3 of whom showed marked improvement during the period, and in 2 of the mixed cases the patients also showed improvement as regards the tubercular portion of the disease. After a period varying from six to twelve weeks the nodules became softened and finally broke down and ulcerated, the ulcers discharging copiously a thin pus containing numerous lepra bacilli. Other nodules, generally small, and more especially on the face, apparently underwent absorption and disappeared without ulceration. Two of the patients had large leprotic infiltrations stretching across the chest and abdomen; these underwent ulceration in the same way as the smaller masses.

(b) Effects on anesthetic cases.—Of this variety 5 patients were treated, and all with the exception of one were advanced cases, with numerous anesthetic areas, paralysis of the muscles of the forearm and the interossei muscles of the hand, "*main en griffe*," and loss of fingers or toes. None of these symptoms underwent any noticeable change during the period of treatment; as it is probable, however, that in these patients the destruction of the nerve fibers had proceeded so far as to be converted into connective tissue, no other result could be expected from either this or any other remedy. In the fifth case, which was one of only two years' duration, and in which the patient had no other symptoms beyond the patches of anesthesia on the skin, there was thought to be some slight improvement, but not sufficiently definite to be properly described as being due to the treatment.

(c) Effects on special symptoms and general health.—All the patients treated, both tubercular and anesthetic, said that they felt better and stronger as a result of the treatment, that their appetites had improved, and that they were able to do more work.

(d) Effects on the lepra bacilli.—The method of investigation was as follows: Fluid from a nodule or from the nose was taken and stained by Ziehl-Neilsen's method, and the number of bacilli in a dozen fields was noted. This was done from time to time during the course of the treatment and the results compared. In the cases in which the ulceration occurred it was found that during the period of profuse discharge and sloughing of the contents of the nodule the number of the bacilli was greatly increased, innumerable clumps being seen in each field. After the contents of the nodule were extruded, leaving a clean granulating surface, the number gradually declined, until many fields contained no bacilli at all, and others contained either small clumps or bacilli scattered singly. With regard to the nodules which underwent absorption, similar effects were noted.

Sei-I-Kwai Medical Journal, Tokyo

June, XXXIII, No. 6, pp. 33-38

31 Influence of Osmotic Pressure on Caliber of Vessels. Kubota.
32 Antigen Action of Tubercle Bacillus Freed from Fats. K. Momose.
33 Clinical and Bacteriologic Study of Kubisagari Disease. P. L. Conchoud and F. Shionnoya.
34 Orthodiagraphic Examination of Heart in Beriberi. Y. Ido and Y. Watanabe.
35 Experimental Study on Tetrodon Toxin. Kariya.
36 *New Method for Estimation of Sugar in Small Quantity of Blood. Kaminura.

36. Method for Estimation of Sugar in Small Quantity of Blood.—For this purpose two solutions are made by Kamimura; the first solution is composed of 4.278 gm. of pure crystalline sulphate of copper and 5 liters of distilled water, and the second solution is made up with 2.0 c.c. of glycerin, 21.0 gm. of caustic potash and so much liquor ammonia (sp. gravity 0.96) as to make the mixture up to one liter. Five c.c. of the first solution, which corresponds to 0.005 gm. of glucose, is put into Sudo's glass-tube and then it is filled up to mark "X" with the second solution. The upper surface of this mixture is then covered with liquid paraffin to prevent the influence of the air on the copper solution.

The plasma or serum is isolated from the blood, which is going to be examined, and the quantity of which needs be only 1 to 2 c.c.; it is then diluted 5 to 6 times its original volume with water, after separating its protein component in order to make the filtration easy. The filtrate is added to the mixture of the copper solution which has been warmed up to from 80 to 85 F. beforehand drop by drop till the copper solution is absolutely discolored. The quantity of sugar X can be calculated by the following formula, N being the quantity of the filtrate employed: $x = \frac{0.005}{N}$ by $100 \frac{0.05}{N}$. In case the whole filtrate is not enough to discolor the copper solution one adds a quantity of 0.02 g/dl. solution of glucose to help the final discoloration. The formula runs then as follows: $x - \frac{0.05\text{-}0.02 \times b}{a}$ a = the quantity of the filtrate used; b = the quantity of the glucose solution added. This method is simple and can be carried out with any quantity of blood. The results are fairly exact, the difference against the control examinations being not more than 3 per cent.

Annales de Médecine et Chirurgie Infantiles, Paris

June 15, XVIII, No. 12, pp. 393-428

37 Inconveniences of Luetin Test for Diagnosis of Syphilis in Children. G. Blechmann and M. Delort.
38 Serotherapy of Cerebrospinal Meningitis; Two Cases. M. Delort and J. Stiassnie.
39 Hernia and Appendicitis. V. Veau.
40 Heliotherapy and Surgical Tuberculosis. A. Trèves.

Bulletin de l'Académie de Médecine, Paris

June 16, LXXVIII, No. 24, pp. 805-837

41 The Economic Prognosis with Industrial Accidents. (Pronostic social des accidents du travail.) E. Schwartz.
42 The Painful Form of Stenosis of the Pylorus. Enriquez. See Paris Letter, page 177.

Journal de Médecine de Bordeaux

LXXXV, Nos. 23-25, pp. 387-434

43 Cause of "Black Tongue" Still a Mystery. (Les parasites des langues noires.) L. Jannin.
44 Favorable Results of Induced Pneumothorax; Thirty-Eight Cases. C. Murard and C. Colbert.
45 Right and Left Air Passages Not Independent of Each Other. (Indépendance fonctionelle des voies aériennes droites et gauches.) Got.

Lyon Chirurgical

June, XI, No. 6, pp. 549-678

46 *The Fibula the Best Bone for Transplantation in Conservative Operations. (Le péroné greffon de choix: Son utilisation dans les opérations conservatrices, pour ostéosarcome en particulier.) M. Gangolphe and P. Bertein.
47 Transplantation of Fascia Valuable in Injuries of the Abdominal Wall. (Sur la greffe aponévrotique libre.) E. Greggio.
48 Decapsulation of the Kidney in Mercurial Nephritis; Four Cases. G. Tisserand.
49 Embolus of the Pulmonary Artery. Trendelenburg's Operation. Death during the Operation. G. Leclerc.
50 Arteriovenous Aneurysm of the Common Femoral Vessels. Extirpation and Quadruple Ligation. H. Bouquet.

46. **Transplanting the Fibula.**—Gangolphe and Bertein regard autoplastic transplantation of bone as necessary with any considerable loss of substance in bone. The fibula is the best bone to use because it is so easily removed, being near the surface; because it is not of great importance in its normal position, and because it yields a graft surrounded completely by periosteum. A complete segment of the bone should be taken at about the middle of the diaphysis. If the upper end is taken so as to secure a cartilaginous surface for use in a joint, care must be taken to avoid the external popliteal. The lower incision should not be less than 5 cm. from the external malleolus. The graft should be cut a little longer than the gap to be filled, pointed at the ends, and inserted into the marrow cavity of the bone being repaired. If this cavity is too small the transplant may be sutured in place with wire. The results were very encouraging in the 20 cases here compiled of transplantation on account of osteosarcoma; in 5 for comminuted fractures; 21 for osteomyelitis, and 1 for a case of bone syphilis.

Lyon Médical

XLVI, Nos. 23-24, pp. 1253-1364

51 Removal of Cancer of the Orbit with Preservation of Eyeball; Six Cases. No Recurrence in Five. E. Rollet.
52 Early Operation in Appendicitis and Closure of the Wound without Drainage. M. Durand.
53 Symptoms of Disease of the Upper Medulla; Two Cases. L. Bériel. Commenced in No. 22.

Presse Médicale, Paris

XXII, Nos. 49-51, pp. 465-496

54 Diagnosis and Emetin Treatment of Amebic Dysentery. L. Lagane.
55 *Albumin Content in Differentiation of Effusions and Transudates. (L'albumino-diagnostic des épanchements des séreuses.) Mosny, Javal and Dumont.
56 *Petrolatum in Treatment of Constipation. (L'huile de vaseline comme exonérateur intestinal.) A. Martinet.
57 Endonasal Treatment of Frontal Sinusitis. M. Denis and L. Vacher.
58 Azotemia and Death. D. Dumitresco and A. Popesco.
59 Syncopal Form of Paroxysmal Tachycardia. Esmein and Donzelot.

55. **Differentiation of Effusions and Transudates.**—The Rivalta test fails when it is a question of cardiac pleurisy or transudate, in which differentiation is most important. Mosny and his coworkers have determined by study of fifty cases that the albumin content in cases traceable to a like cause kept within a characteristic range. This "albumino-diagnostic" method is based on precipitation of the albumins in the fluid and dosage by weight, or estimation of the content by refractometry. The effusion with cancer or serofibrinous and infectious pleurisy has an extremely high albumin content, fully 40 to 66 gm. to the liter. An albumin content of less than 30 gm. speaks for a transudate. In the case of a boy of 11 with pleural effusion and anasarca, the diagnosis of tuberculous pleurisy and peritonitis was first disproved by the repeated finding of only 4 to 7 gm. of albumin in the puncture fluids. On this finding alone the diagnosis was changed to adherent pericarditis and the course of the case confirmed this. In another case an extensive collection of fluid in the left pleural cavity, developing after a childbirth, showed only 20 or 30 gm. albumin on repeated examination, and necropsy disclosed an entirely unsuspected mitral stenosis confirming the assumption of the mechanical origin of the collection of fluid. In another case the albumin content of only 3 gm. in the large accumulation of fluid in the abdominal cavity first threw doubt on the diagnosis of tuberculous peritonitis made by different physicians in the course of fifteen years. Closer examination of the case then revealed hydronephrosis which had previously escaped detection.

56. **Petrolatum in Treatment of Constipation.**—Martinet states that petrolatum can aid in the relief of constipation as a rule only when the trouble is due to spastic conditions. In persons inclined to atony and hyposthenia the effect is poor or directly injurious.

Revue de Chirurgie, Paris

June, XXXIV, No. 6, pp. 721-897

60 Polyp in Nasopharynx. E. J. Moure and G. Canuyt.
61 The Aponeuroses in the Axilla in Relation to Phlegmons. L. Moreau.
62 *Latent Retention of Bile. M. Brulé, H. Garban and L. G. La Salle.

62. **Latent Retention of Bile as Sign of Injury of Liver.**—In many conditions such as general anesthesia, appendicitis, etc., the liver is more or less affected but this escapes notice unless the urine is examined for retention of bile. The research here reported shows that this retention is not of the whole bile, but only of one or more of the bile elements. Only the liver cells themselves are capable of this discriminating retention. When it occurs it shows that the liver is not functioning normally and hence the detection of this is extremely important when it is proposed to inflict further injury on the liver, for instance, by general anesthesia. Brulé and his coworkers have been applying simultaneously all the tests in vogue to detect the presence of bile elements in the urine, and state here that the two simplest are about as sensitive and reliable as any and can be applied at the bedside. These are the Ehrlich benzaldehyd and Hay sulphur tests. Dusting a little dry flowers of sulphur on fresh and filtered urine reveals the presence of bile salts by the sinking of the sulphur to the bottom. Unless the urine contains biliary salts, the surface tension is sufficient to buoy up finely powdered sulphur. The benzaldehyd reagent is a mixture of 8 gm. paradimethylamidobenzaldehyd; 80 gm. concentrated hydrochloric acid and 200 gm. water. When a

few drops of this reagent are added, cold, to fresh urine, the tint changes to pink or red if it contains urobilinogen.

With these tests of the morning urine it was found that ether has an injurious action on the liver more often than has been suspected hitherto. The retention of bile elements in such conditions may be compared to the transient albuminuria during acute infections, but Brulé's experience seems to show that the liver is affected more regularly and to a greater extent than the kidneys under such circumstances. Positive findings were obtained in 11 of 21 cases of appendicitis facing an interval operation. Also in all but 5 of 33 patients just after an operation under ether, and in all but 1 of 15 under chloroform.

Revue Médicale de la Suisse Romande, Geneva

June 20, XXXIV, No. 6, pp. 385-448

63 Imagined Pregnancy. (Clinique obstétricale.) Rossier.
64 Operative Obstetric Cases. Rossier.
65 *Diabetes and Tuberculosis. Morin.

65. **Diabetes and Tuberculosis.**—Morin quotes Landouzy's recent statement that diabetes is not a morbid entity or nutritional disease but is a syndrome consequent on some infectious, toxic or parasitic affection. The correctness of this view is rendered evident by the improvement in the diabetes when the infectious, toxic or parasitic affection yields to proper treatment, for instance, specific treatment of syphilis or abstention from alcohol. The toxic or infectious influences may act on the tissues in general but their injurious effect is probably most pronounced on the glands and nervous system. In every case of diabetes the primary trouble, especially tuberculosis, should be sought and treated as the main element in the cure. He has always found a mountain climate of great benefit in diabetes by the way in which the elimination of carbon dioxid and assimilation are promoted.

Semaine Médicale, Paris

June 24, XXXIV, No. 25, pp. 289-300

66 Changes in Other Kidney after Nephrectomy, etc. (De la signification de la dégénérescence granuleuse et des lésions cytolytiques dans le rein après ligature ou excision du rein du coté opposé.) V. Jonnesco.

Archiv für Kinderheilkunde, Stuttgart

LXII, Nos. 5-6, pp. 321-482. Last indexed February 28, p. 736

67 Döhle's Inclusion Bodies Found in Leukocytes in Scarlet Fever, Measles, Diphtheria, Tonsillitis and with Serum Rashes. S. N. Rosanoff.
68 Negative Experiences with Rosenbach's Tuberculin in Internal Tuberculosis in Children. A. Stommel.

Archiv für klinische Chirurgie, Berlin

CIV, No. 4, pp. 843-1206. Last indexed July 11, p. 202

69 Experimental Transplantation of Epiphysis. (Transplantation des Intermediärknorpels in Form der halbseitigen Gelenktransplantation.) Heller.
70 Histologic Changes in Transplanted Fascia. (Experimentelle Untersuchungen über den histologischen Umbau der frei transplantierten Fascia lata und Beweis für die Lebensfähigkeit derselben unter Heranziehung der vitalen Farbung.) O. Kleinschmidt.
71 *Experimental Research on Muscle Flap Used to Arrest Hemorrhage. (Freie Uebertragung von Muskelstücken aufs Herz und in einige andere Organe.) A. Lawen and A. Jurasz.
72 Successful Excision of Extensive Hemangioma of Lower Lip and Tongue. E. Sonntag.
73 Deafness Following Fracture of Base of Skull. (Ein- und gleichseitige Vagus- und Accessoriusläsion und vollkommene Taubheit nach Schädelbasisfraktur.) E. A. Lüken.
74 *Muscle Flaps Used to Arrest Hemorrhage in Heart and Liver. (Stillung von Herz- und Leberblutungen durch frei übertragene Muskelstücke.) A. Läwen.
75 Prophylactic Treatment with Extract of Leeches as Preliminary to Laparotomies. (Versuche uber Adhasionsbeschränkung in der Bauchhöhle durch Hirudinbehandlung.) W. Schmiedt.
76 *Tests of Functional Capacity of the Stomach. (Zur funktionellen Magendiagnostik.) J. Hohlbaum.
77 Mobilization of the Duodenum. A. T. Jurasz.
78 Single Echinococcus Cyst in the Omentum. (Ein solitärer Netzechinococcus.) O. Kleinschmidt.
79 Congenital Dislocation of the Patella. W. Dünkeloh.

71-74.—**Muscle Flaps to Arrest Hemorrhage.**—All the articles in this number of the *Archiv* issue from the surgical clinic at Leipzig in charge of Prof. E. Payr. Läwen and Jurasz found it possible to arrest the hemorrhage from the heart, after injury of a ventricle, by suturing a flap of muscle over the bleeding spot. They illustrate the procedure and the outcome in fifteen rabbits. The bleeding was arrested at once and the heart kept on working the while. In another series of experiments they sutured the muscle flaps after inducing bleeding from a kidney, liver, in the marrow cavity of the tibia or in the brain. The hemorrhage was arrested with special promptness and thoroughness in the liver and kidney wounds. The muscle flap cohered to the tissues of the bleeding organ in a way to ensure almost immediate occlusion of the opening.

76. **Tests of Stomach Functioning.**—Hohlbaum discusses the various tests in vogue. Comparison of the histories of a number of cases with the findings at the operation confirms the clinical importance of the Salomon test, positive findings indicating an ulcerative process in the stomach. It is of no value for differentiation; here the Gluzinski test is of paramount importance. The literature on each is listed and the details of a number of cases are given. The Salomon test is based on the assumption that the presence of albumin in the stomach contents indicates oozing of serum from an ulcer. He regards the findings as suspicious of cancer when the rinsing fluid shows rapidly a flaky turbidity or its nitrogen content is above 20 mg. in 100 gm. of the rinsing fluid. Hohlbaum found the prompt flaky turbidity pronounced in all of his 20 cases of gastric cancer while it was constantly negative in 5 cases of duodenal ulcer, also in 5 of gall-stone trouble; in 2 healed gastric-ulcer cases, and 1 of 3 hard ulcers. He calls attention in particular to 2 cases in which the subjective disturbances, palpation findings, chemical and microscopic findings after a test breakfast, and Roentgen findings—all seemed to show an identical process in the stomach, but the Salomon test was positive in one and negative in the other. In each instance the operation confirmed the reliability of the Salomon findings; one proving to be a cancer in the stomach, the other a case of chronic pancreatitis.

The Gluzinski test is based on the assumption that incipient cancer is always accompanied by a chronic mucous gastritis which interferes with secretion of the gastric juice. Examination of the stomach content after three different test meals in the course of one day reveals whether gastric juice is being secreted normally; if not, this in connection with the clinical signs of trouble, points to malignant disease. Positive findings with it were obtained in all the cancer cases, the test proving remarkably reliable in differentiating between cancer and simple ulcer when there is free acid in the stomach content. It is liable to fail, like other tests, in the presence of a callous ulcer, and transverse resection is the advised procedure for this in any event. The microscope often reveals malignant degeneration in apparently a simple callous ulcer.

Archiv für Verdauungs-Krankheiten, Berlin

June 18, XX, No. 3, pp. 299-422

80 Carmin for Marking Off Stools. (Zur Verwendung der Karminprobe für die Bestimmung der Verweildauer im Verdauungskanal.) H. Strauss.
81 *Examination of Stomach Content with and without the Stomach Tube. (Mageninhaltsprüfung ohne Anwendung des Sondenverfahrens.) E. Schütz.
82 *Blotting-Paper Test for Stomach Acidity. (Kapillaranalyse des Magensaftes, ihre praktische Bedeutung nebst einigen Bemerkungen, andere Methoden der Magensafttitration betreffend.) H. Sochanski.
83 Present Status of the Duodenal Tube. M. Gross (New York).
84 Recurring Indicanuria in Diagnosis of Gastro-Intestinal Disease. G. Baar and K. Frenkel.
85 *Organic and Functional Gastric Achylia. L. Disqué.

81. **Examination of Stomach Contents.**—Schütz has been applying the various methods in vogue for estimating the condition of the stomach contents without and with the stomach tube, and tabulates the findings with some of them. None can compare in efficiency, he declares, with the stomach tube; next come the occult-hemorrhage, Roentgen-ray and residuum tests. The Fuld sodium bicarbonate test for free hydrochloric acid can be applied under all circumstances and is simple and convenient. The patient drinks a solution of 2 gm. sodium bicarbonate in 30 gm. water one hour

after a test breakfast. As the patient stands and the ear is applied to the epigastrium and upper abdomen, the intensity and duration of the effervescence then audible gives a good idea of the amount of free acid present.

82. **Blotting-Paper Test for Stomach Acidity.**—Sochanski regards Holmgren's method of capillary analysis of the stomach content as great progress. It is based on the fact that when a solution of a mineral acid is dropped on blotting paper, the water spreads faster and farther than the acid, so that the proportion of acid in the fluid can be readily computed from the proportional size of the concentric rings. He reports here the findings with gastric contents from thirty-two persons tested on blotting paper prepared with very weak stains to show up the different acids in the stomach content. The quantitative and qualitative findings are quite reliable and the test can be applied to vomit at the bedside. He has found the test most instructive when the blotting paper is marked off with concentric circles crossed by a perpendicular strip stained with 1 per cent. solution of congo red, and a horizontal strip stained with 0.5 solution of alizarin red. He uses 0.5 c.c. of stomach content and notes the results after an interval of three minutes. By this means the content in free hydrochloric acid and in lactic acid is shown up simultaneously.

85. **Gastric Achylia.**—Disqué concludes from his experience and study of the literature that functional achylia is more common than the organic and should be suspected in preference to the latter when there are signs indicating constitutional inferiority, weakness, nervousness or sagging viscera. The motor functioning of the stomach is generally more pronounced in case of functional than organic achylia. Abnormal chemical findings in the stomach content speak more for organic achylia. The prognosis is better with functional than with the organic form, and better with the acquired than the congenital. Treatment should be diametrically opposite with achylia of organic or functional origin. With the former the stomach should be spared as much as possible, while with functional achylia every effort should be made to nourish the patient; forced feeding may be advisable, with rather coarse foods. Meat will stimulate functioning of the stomach mucosa. Physical measures are also indicated with functional achylia to stimulate functioning, hydrotherapy, electricity, alternating hot and cold lavage, and douches, air baths, psychotherapy, etc.

Beiträge zur Klinik der Tuberkulose, Würzburg

XXXI, No. 2, pp. 141-456

86 *Friedmann's Remedy. (Klinische Mitteilungen zur Behandlung der Tuberkulose mit dem *Friedmannschen* Mittel.) L. Brauer.
87 *Air Embolism in the Brain. (Cerebrale Luftembolie.) E. Wever.
88 Examination of Sputum in Diagnosis of Chronic Mixed Infection with Pulmonary Tuberculosis. E. Peters.
89 *Treatment of Asthma. O. Joppich.
90 Relations between the Public Hospitals and the Public Health. G. H. Sieveking.
91 The Skin Tuberculin Reaction in Infants. (Die v. Pirquetsche Kutanreaktion im Säuglingsalter.) Moltrecht.
92 Partial Antigens and Antipartial Antigens in Pulmonary Tuberculosis and Lupus. F. Salomon and A. Adam.
93 Relationships of the Tubercle Bacillus and Action of Sunlight on Antigens and Antibodies. (Verwandtschaftliche Beziehungen des Tuberkelbazillus.) E. Leschke.
94 Immunity to Tuberculosis. H. Much and E. Leschke.
95 Passively Acquired Anaphylaxis. K. Moeckel.
96 Treatment of Tuberculosis According to Deycke-Much. E. Alstaedt.

86. **The Friedmann Tuberculosis Treatment.**—Brauer remarks that the amazingly confident way in which Friedmann launched his remedy two years ago in the medical and lay press induced many physicians—in spite of misgivings—to yield to the wishes of certain tuberculous patients and use the remedy on them. The remedy at first could not be obtained in Germany for individual control research and the unfavorable reports which came from America further contributed to postpone the verdict of the German profession on the remedy. But when they were able to investigate it, the conclusions were almost unanimously negative. Brauer adds that communications made to him verbally and by letter demonstrate that the denunciatory verdict is even more universal and unanimous than is shown by what has been published in the leading medical journals. He gives the full details of the cases in which the treatment was applied in his service, prefacing them with Goldwater's report on the recent status of the seventy-seven patients given the treatment at the time of Friedmann's "dramatic and widely advertised visit" to New York. Brauer reiterates in conclusion that it is to be hoped in the interests of the tranquil and steady development of German medical science and of the health and peace of mind of the sick that the sensational agitation over the Friedmann tuberculosis treatment will disappear from scientific journals and, above all, from the newspapers. He appeals to the medical advisers of the daily papers to use their influence to keep out of the papers communications on half-baked or sensational medical matters liable to arouse misleading hopes in the general public, or at least to publish such items in a form suggesting critical suspension of judgment on the matter. A stricter critical judgment is needed on all the methods of treating tuberculosis, serologic and chemical, which are being put forth in all countries nowadays. Examination of the world literature on the subject cannot fail to show that much of what is published lacks an exact experimental basis and the work has been done without the necessary critical spirit.

87. **Air Embolism in the Brain.**—Wever injected air into the cerebral vessels of 7 rabbits, 24 dogs and 5 monkeys and compared the results with the clinical picture of the "mishaps" occurring in connection with operations on the lungs and chest, induced pneumothorax, etc. He compares his findings with those obtained by others in similar research. The presence of air in the cerebral vessels may cause clinical pictures of varying gravity, from transient nausea, vomiting, transient blindness, brief paresis, or brief cramps to actual epileptic seizures, or the patient may die suddenly without any premonitory symptoms. Necropsy may fail to reveal the air bubbles, especially if the heart continues to beat a few minutes longer. They were evident in the personal case reported as the patient collapsed and died at once during the operation for gangrene of the lung and cancer of the esophagus. The one certain and apparently constant sign of cerebral air embolism is the peculiar aspect of the fundus of the eye, striking and typical, as Wever shows in a colored plate. On account of the spontaneous mydriasis at the time, the fundus is easily inspected.

89. **Treatment of Asthma.**—Joppich expatiates on the necessity for combating the predisposing factors in asthma studying whether the oversensitive nerves belong to the peripheral or central nervous system, and the influence of overwork and worry, of dust, soot, fog or odors, acting directly or by summoning up memories. The reflex irritation causing the attack may be set up from the digestive, respiratory or genital organs, or the skin, and each case must be analyzed to discover and remove the special exciting factor in each. Wassermann seeks to reduce reflex excitability by deadening the sensibility of the nose with epinephrin and a local anesthetic on cotton applied for fifteen minutes a day for two weeks and later every second or third day. The reflex route thus gets trained out of the habit of transmitting the abnormal stimulus. Among the numerous other measures discussed is the subcutaneous injection of 0.5 or 1 mg. atropin with or without morphin.

Beiträge zur klinischen Chirurgie, Tübingen

XCI, Nos. 1 and 2, pp. 1-402

97 *Modern Battle-Field Surgery. A. Fraenkel.
98 Surgical Experiences in the Balkan Campaigns. F. Goldammer, Coenen, Weil, Brandes, Hauke and Cilimbaris.
99 Firearm Wounds. (Zur Kasuistik der Geschosswirkung.) P. R. v. Walzel.
100 Bullet Wounds of Vessels. (Schussverletzungen der Gefässe durch Spitzgeschoss und ihre kriegschirurgische Behandlung.) F. Lotsch.
101 Firearm Injuries Causing Aneurysms. O. R. v. Frisch.
102 Firearm Wounds of Nerves. W. Denk and M. Gerulanos.
103 *Surgical Indications in Firearm Wounds of the Brain. (Hirnschüsse im Kriege.) P. L. Friedrich.
104 Firearm Wounds of the Cranium. (Schädelschüsse im Kriege.) B. Breitner.

105 Firearm Wounds of Face and Neck. (Gesichts- und Halsverletzungen.) E. Suchanek.
106 Firearm Wounds of Thorax and Abdomen. E. Suchanek.
107 Firearm Fractures of Limbs. G. v. Saar, W. Goebel and J. Eallner.
108 Firearm Wounds of Large Joints. W. Denk.

97. Modern Battle-Field Surgery.—All the articles in this large double number of the *Beiträge* are on surgical experiences during the recent Balkan campaigns. A number are profusely illustrated.

103. Firearm Wounds of the Brain.—Friedrich remarks that modern battle-field surgery seems to be becoming more and more restricted to the brain and the limbs. Bullets in the brain mowed down about 50 per cent. of all that died on the field during the Franco-Prussian war, 54.2 per cent. in the Russo-Japanese war, 70 per cent. in the Boer campaign and the proportion was fully as high in the Balkan campaigns. He reviews a series of 43 cases of which he kept full notes and remarks that recovery was surprisingly frequent. He does not advocate trephining at once but only when cerebral symptoms develop under close and not too cursory observation. Any sudden or even a gradual rise in temperature, when the course has been afebrile before, suggests infection of the brain. It is especially important to have the temperature taken at night, between 12 and 2; it may be normal at all other times. If the normal pulse-rate drops to 55 or 50 or lower, this may be the only sign of infection. He had an operation done on this sign alone in several cases and always found the anticipated abscess in the brain. Any disturbance in consciousness, increasing somnolency, is also instructive while headache alone is not. We have no means of differentiating between meningitis and an abscess either on the battle-field or at home.

Berliner klinische Wochenschrift, Berlin

June 22, LI, No. 25, pp. 1157-1204

109 *Tuberculosis of Prostate. F. A. Hesse.
110 Obstetric Injury of Humerus. (Verletzungen des oberen Humerusendes bei Geburtslahmungen.) S. Peltesohn.
111 Cod-Liver Oil and Vegetables Often Superior to Butter and Cream in Infant-Feeding. (Fettaustausch in der Sauglingsernahrung.) J. Pesier.
112 *Excessive Tonicity of the Muscles in the New-Born. (Hypertonische Neugeborene und Sauglinge.) P. Heim.
113 Production of Anaphylatoxin. H. Sachs and E. Nathan.
114 Serum Reactions. L. Hirschfeld.
115 *Typhoid-Bacilli Carriers. (Dauerausscheider.) A. Hirschbruch.
116 *Segregation of Blood in the Limbs to Relieve Congestion in Internal Organs, Edema or Hemorrhage. Blum.
117 Streptothrix Found in Lumbar Puncture Fluid. M. Bernhardt.
118 Jaundice. (Icterus.) A. A. H. v. d. Bergh and J. Snapper. Commenced in No. 24.

109. Tuberculosis of the Prostate.—Hesse says that the evidence already on hand demonstrates that the prostate is the one organ in the urogenital apparatus most frequently affected with tuberculosis. In 815 cases of urogenital tuberculosis on record, the prostate was the seat of a tuberculous process in 68.5 per cent.; next came the seminal vesicles and thirdly the epididymis. The only relief lies in total removal of the gland with the seminal vesicles and vasa deferentia, and he emphasizes that the operation can never be done too early. A concomitant tuberculous process in the lung may retrogress after the prostatectomy, if not too far advanced. With one in the kidney, Hesse advises nephrectomy first, and if no benefit is apparent in six or eight weeks at most, prostatectomy should be delayed no longer. Cases are on record in which the process in the prostate retrogressed after removal of tuberculous testicles, and here, too, a delay of a month or two—never longer—might be permissible. The experiences of the last few years justify a more aggressive treatment of tuberculosis of the prostate than has hitherto prevailed.

112. Hypertonicity in the New-Born.—Heim remarks that the old, tacitly accepted conception that babies are created physiologically equal no longer prevails in modern pediatrics. The "exudative diathesis" was the first constitutional condition of inferiority recognized, and Heim here calls attention to another similar constitutional condition in which the infants react to physiologic and pathologic stimuli in a manner quite different from other infants. The nerves and muscles respond normally to electric tests but the deep reflexes and the physiologic tonus are exaggerated, and the muscles are drawn up, the limbs stiffly flexed. Sometimes a pencil placed in the infant's hand may be grasped so firmly that the child can be lifted by the pencil. The nervous threshold is extremely low in these children, and although they usually outgrow their hypertonicity by the fourth to eighth month, they develop into lean, muscular, bright children with very unstable vasomotor system. After birth they grow in height but do not increase normally in weight, and the sugar in breast milk is liable to bring on diarrhea. These hypertonic babies do not seem to be thriving even when stools and temperature are normal and their food seems to be correct and ample.

115. Typhoid-Bacilli Carriers.—Hirschbruch states that the great difficulty in discovering bacilli carriers is that they eliminate the bacilli only intermittently, as he shows by a number of instances from the Metz station. One woman was examined daily and the findings were negative fifty-two times and positive only twice, and yet typhoid bacilli were found at necropsy. In another woman examined regularly once a month, at one time there was a negative interval of three years and ten months between numerous positive findings. Typhoid bacilli were found in 1910 in the stool of a woman who had typhoid forty years before. She died three years later and nine days after her death another inmate of the house developed typhoid for which she was evidently responsible. Some of the known carriers voided the bacilli only after taking castor oil, others only after aloin and podophyllin, while in two of the known carriers elimination of the bacilli could not be stimulated by any of the numerous purgatives tried.

116. Segregation of the Blood in the Limbs to Relieve Congestion in the Brain, Etc.—Blum suggests that a constricting band at the root of the arms and legs would shut off a large amount of venous blood without interfering materially with the arterial circulation and thus might tide the patient past the danger point in pulmonary edema, acute hydrocephalus, serous meningitis and in acute hyperemia in the brain, with status epilepticus or paralyticus, and, above all, when there is hemorrhage from the lungs. Blum is convinced that this segregation of the blood may be found useful with hyperemia from any cause in an internal organ or tendency to hemorrhage, even with hemorrhoids, in addition to the usual measures.

Correspondenz-Blatt für Schweizer Aerzte, Basel

XLIV, Nos. 23-26, pp. 705-832

119 Operative Treatment of Enlargement of the Prostate. H. Wildbolz.
120 Necessity for Thyroid Treatment of Endemic Cretinism. A. Oswald.
121 *Pyelocystitis in Children. O. Stiner.
122 Treatment of Surgical Tuberculosis at Berne. C. Arnd. Commenced in No. 25.

121. Pyelocystitis in Children.—Stiner declares that getting chilled is generally found to have preceded the pyelocystitis even when it develops in a child with the exudative diathesis or a tendency to scrofula or sluggish metabolism. He describes several typical cases; in one a girl of 3 stood in the snow watching the skating and soon after returning home screamed that she was unable to urinate and fever soon developed. The external genitals were red and swollen. While a catheter was being prepared the child was seated in a hot bath of chamomile infusion and in five minutes the bladder spontaneously emptied itself. Improvement continued under hexamethylenamin and linden-flower tea internally, repeating the bath as necessary. After bathing the external genitals with boric acid, it was deemed safe to use the catheter, and the urine proved typical of cystitis. All returned to order again in two weeks, during which the child was kept in bed and treated with hexamethylenamin and salol alternately four days each. Both parents and the child were subject to frequent headaches. In the second case a boy of 19 months had "caught cold" from sitting on wet stone steps. A week later cystitis manifested itself by an edematous swelling and cyanosis of the penis, preventing micturition. In some other cases the pyelitis began with convulsions or vomiting; catarrhal affections of the upper air passages are frequent. Sometimes pyelitis develops under the picture of meningitis or typhoid. It is more than probable, Stiner remarks, that occasionally an appendix has been sacrificed unnecessarily in an unsuspected pyelitis. In two other personal cases related microscopic examination of the urine was all that saved from this blunder. In the first, a girl of 4, had the tenderness typical of appendicitis with slight tenderness up toward and in the right kidney region. The other child, a healthy boy of 8, was taken with vomiting on his way to school and had high fever, vertigo and abdominal pain when he returned. The local findings spoke exclusively for appendicitis, but the boy mentioned that for several days frequent desires to urinate had annoyed him in school. The appendix was found much inflamed and swollen and the pyelitis healed along with the appendicectomy wound without any special measures.

Deutches Archiv für klinische Medizin, Leipzig

CXV, Nos. 1-2, pp. 1-206. Last indexed July 18, p. 282

123 Effect of Pancreas Extract on Blood-Pressure in Acute Experimental Nephritis in Rabbits. H. Zondek.
124 Functional Derangement of the Kidneys. (Zur Kenntnis der *Nephropathien.*) *P. v. Monakow.*
Amount of Albumin Katabolism in Fever and during Work. (Grösse des Eiweisszerfalls bei Fieber und bei Arbeitsleistung.) R. A. Kocher.
126 Measuring *the Volume and Work of the Pulse. (Volum Messung* des menschlichen Radialpulses, die Volumbolometrie. Neue Art der Arbeitsmessung des Pulses.) H. Sahli.
127 Increase of Eosinophils after Injection of Tuberculin. (Verhalten der weissen *Blutkorperchen, insbes. der eosinophilen* Leukocyten, bei probatorischen Tuberkulininjektionen.) O. Brosamlen.
128 The Symptoms of Cystic Kidney Are Similar to but Not Identical with Those of Chronic Interstitial Nephritis. (Cystennieren.) W. H. Veil.
129 *Nucleinic Acid Test in Diagnosis in Blood Diseases. (Nukleinsäure bei Blutkrankheiten. W. Könnecke.

129. Nucleinic Acid in Blood Disease.—Leukocytosis is an expression of the biologic reaction of the bone marrow to the toxins of disease, and Könnecke found that intramuscular injections of a 10 per cent. solution of sodium nucleinate had the effect of stimulating the development of leukocytes and hastening their maturity.

Deutsche medizinische Wochenschrift, Berlin

June 18, XL, No. 25, pp. 1249-1296

130 Treatment of Tropical Diseases. P. Mühlens.
131 Intraperitoneal Treatment with Radium. H. Freund.
132 Experimental Study of the Protective Ferments. (Abwehrfermente.) V. Kafka and O. Pförringer.
133 Serodiagnosis of Cancer. (Zur Serodiagnostik der malignen Geschwülste.) K. Hara.
134 Animals Rendered Sterile by Treatment with Iodin. (Beeinflussung der Fortpflanzungsfähigkeit durch Jod.) O. Loeb and B. Zöppritz.
135 **Analysis of the* Alleged Salvarsan Deaths. J. Benario.
136 *Indications for Friedmann's Treatment of Tuberculosis. (Erläuterungen zu den Indikationen für das Friedmannsche Mittel.) F. F. Friedmann.
137 *Periodical Hemorrhagic* Nephritis. N. J. Tschistowitsch.
138 Perforation of Cecum with Ileus in Lower Intestines; Two Cases. (Zoecumperforation bei tiefsitzendem Dickdarmverschluss.) M. Cohn.
139 Metastasis of Hypernephroma in the Spine. H. Harttung.
140 Technic for Intraspinal Salvarsan Treatment. Tuszewski.

June 25, No. 26, pp. 1297-1352

141 Treatment of Acute Infectious Conditions in Children. Tobler.
142 *Type of Tubercle Bacilli in Sputum. B. Möllers.
143 *Renal Diabetes. A. Galambos.
144 Calcification of Arteries without Preceding Arteriosclerosis. (Ungewöhnliche Verkalkung der Arterien.) A. M. Levy.
145 *The Wassermann Test in the New-Born. (Eigenartiges Verhalten syphilitischer *Neugeborener* gegenüber der Wa. R.) F. Lesser and R. Klages.
146 Roentgenotherapy Inadequate for Burrowing Cancers of the Skin. (Therapie des tiefgreifenden Hautkrebses.) P. Wichmann.
147 Action of Roentgen *and* Radium Rays on Internal Organs, Especially the Spleen. Heineke.
148 *Detachment of the Retina Cured by Operation. (Netzhautabhebung.) L. Müller.
149 *Experiences with Friedmann's Treatment of Tuberculosis. (Erfahrungen über F. F. Friedmanns Heil- und Schutzmittel.) R. Rosenfeld.
150 Experiences with Piorkowski's *Treatment* of Tuberculosis. (Zur Behandlung der Tuberkulose mit Schildkröten- Tuberkelbazillen *nach Piorkowski.*) P. Bonheim.
151 Technic and Results of Certain Forms of Electrotherapy. (Diagnostische und therapeutische Bedeutung der Kondensatorentladungen.) A. Schnee.
152 Propaganda for Reform. (Zur Bekämpfung der unlauteren Heilmittel- Reklame.) J. Schwalbe.
153 The Side-Chain Theory. (Zur erkenntnistheoretischen Würdigung der Ehrlichschen Seitenkettentheorie.) A. Dworetzky.
154 New Hamburg Institute for Marine and Tropical *Diseases.* F. Fülleborn.
155 The Price of Salvarsan. P. Ehrlich.

135. Deaths After Salvarsan.—Benario claims that only from 4 to 6 of the alleged 274 salvarsan fatalities compiled by Mentberger *can stand analysis* as to any connection with salvarsan given by a *proper* technic. In the 41 cases in which the drug was given to non-syphilitics the authors almost invariably state that the patient was dying from heart or liver disease or something of the kind and the salvarsan was given as the last resource.

136. Indications for Friedmann's Treatment of Tuberculosis.—This communication from *Friedmann himself* states that his experience has shown the necessity for simplifying the technic and drawing more strictly the lines in regard to the indications. The interval between two intramuscular injections must not be less than four or five months, as this interval at least is required before antibodies can be produced in adequate amounts. The effect of a simultaneous intramuscular and intravenous injection lasts for eight, ten or twelve months or longer. Restriction of the treatment to a single injection and then watchful waiting for many months is the secret of success. The intravenous "between injection" must be given, of course, whenever the infiltration in the gluteal muscle begins to be painful and to increase rapidly in size. He reiterates that the remedy consists of living bacteria which manifest their action very slowly. We must not forget that the process here is possibly like that of vaccination with cow-pox, the action of which extends over years and decades.

142. Type of Tubercle Bacilli in Sputum.—Möllers reports further experiences which confirm the rarity of bovine tubercle bacilli in pulmonary or bronchial gland tuberculosis. There are now 974 cases that have been recorded by thirty-six clinicians in which careful search was made for the special type of bacilli involved and in many instances animals were inoculated with sputum or scraps of tissue. Human tubercle bacilli were found alone in all but 0.51 per cent.; bacilli of the bovine type were found alone in only 5 cases, and associated with human bacilli in 2.

143. Renal Diabetes.—The case described by Galambos is possibly the severest one of true "renal diabetes" on record, while the metabolic details are tabulated with exceptional minuteness. The patient was a man of 50 with sugar in the urine and 156 gm. sugar and 2.74 gm. acetone plus acetic acid in the total urine (2,350 c.c.). The diabetes was a casual discovery when he consulted a physician on account of cramps in one calf; he felt otherwise entirely well. The sugar content of the blood was normal or below; alimentary hyperglycemia could not be induced and no connection was apparent between the intake of carbohydrates in the food and the fluctuations in the sugar content of the urine. The case therefore must be regarded as one of typical renal diabetes, and it seems to be the only one on record with acidosis. Galambos declares that the danger of coma threatens with renal diabetes—unless the acidosis can be cured—the same as with ordinary diabetes. This renders a carbohydrate diet imperative and especially as it does not augment the glycosuria with renal diabetes. Except for this, the clinical picture resembled in every respect that of phloridzin diabetes. The anatomic condition and the functional capacity of the kidneys have no bearing on the diagnosis. The low respiratory quotient and the absence of any rise under copious intake of carbohydrates confirm the defective oxidation of sugar. The prompt subsidence of the acidosis with increased intake of carbohydrates points to the loss of carbohydrates as the cause of the acidosis.

145. Wassermann Reaction in the New Born.—Lesser and Klages report that serum from the umbilical vein gave a positive reaction to the Wassermann test by Lesser's technic negative reaction with another technic. This occurred arly in 50 per cent. of the 1,280 infants examined for urpose. This experience shows the necessity for applyhe test with different antigens. The difference in the ion seems to depend more on the alcohol or ether than e organ used for the extract.

Operative Cure of Detachment of the Retina.— says that both the patients operated on by his method a half and one year ago, were both entirely cured he detachment of the retina was complete and of ing. He operates only when all other means have wing at least a year for a thorough trial. His includes 24 cases operated on over two years re known to be entirely cured and a number improvea while the outcome is not known in several. The overstretching of the internal membranes is what he seeks to remedy, thus reducing the size of the eyeball and restoring the vitreous body to its proper place. General anesthesia is required for the operation; the full technic is not given here.

149. **Friedmann's Treatment for Tuberculosis.**—Rosenfeld applied Friedmann's remedy in 43 cases of pulmonary tuberculosis with disappointing results, so that he had abandoned the method in these cases. But in two of his four cases of tuberculous glandular processes he states that decided and unmistakable improvement was realized.

Deutsche Zeitschrift für Chirurgie, Leipzig

CXXVIII, Nos. 3-4, pp. 209-432

156 Combination General Anesthesia. (Weitere Erfahrungen mit Kombinierten Narkosen.) P. Sick.
157 Sarcomas in Stomach and Small Intestine. (Magen- und Dünndarmsarkome.) B. Storch.
158 Rare Complications of Multiple Exostoses. H. Mosenthin.
159 Technical Points for Plastic Operations on the Esophagus. Syring.
160 Inheritance of Familial Physical Peculiarities. (Vererbung familiarer Merkmale, spez. den Vererbungsmodus der Bluterkrankheit und Versuch seiner Erklärung.) W. Lossen.
161 *Chronic Glanders in Man. (Rotz beim Menschen.) F. Ris.
162 *Appendicitis.* Esau.
163 Plastic Operations on Abdominal Wall. (Bauchdeckenplastik.) Grisson.
164 Operation for Exstrophy of the Bladder. (Blasenektopie.) A. Hagentorn.
165 Sugar and Charcoal as Dressing for Wounds. (Ueber den Zucker- und den Kohleverband.) A. Köhler.
166 Peculiar Healing of Supracondyle Fracture of the Humerus in Two Children. W. Carl.
167 Vulvar Cancer; Three Cases. Rittershaus.
168 Treatment of Fracture of External Condyle of the Humerus by Removing Loose Fragment. E. Fabian.

161. **Chronic Glanders in Man.**—Ris reports from Switzerland a case of this disease in a veterinarian of nearly 30. Six days after he had dissected the body of a horse with glanders he developed pain suggesting intercostal neuralgia. and the glanders then proceeded through the various stages of left pleurisy, abscesses in muscles, bronchitis, and pharyngo-laryngitis, the whole with a septic-pyemic course nearly all the time since the first symptoms in 1911. Ris applied roentgenotherapy and salvarsan, after failure of other measures, and the effect of both was decidedly favorable but the debility is so extreme still that the patient is in danger even if the salvarsan kills off the germs.

Medizinische Klinik, Berlin

June 24, X, No. 25, pp. 1045-1086

169 *Scarlet Fever and Nodose Erythema. H. Eichhorst.
170 Anemia and Its Treatment. A. Herz.
171 *Death after Neosalvarsan. (Todesfall nach intravenöser Injektion von Neosalvarsan.) R. Frühwald.
172 Osteoma in Frontal Sinus. (Stirnhöhlenosteome.) A. Zumhasch.
173 Germ Carriers at Sanatoriums and Spas. (Die Tuberkulose- und Influenza-Bacillen-Träger in offenen Kurorten und in Heilstätten.) Ritter.
174 Benefit from Mineral Waters in Organic Disease. (Haben die natürlichen Mineralquellen eine specifische Heilwirkung auf den erkrankten Organismus?) Lenné.
175 *Acute Congestion of the Liver. (Akute Stauungsleber.) J. Fels.

June 28, No. 26, pp. 1087-1126 and Supplement

176 *Clinical Importance of the Thymus. H. von Haberer.
177 *Seasickness and Its Treatment. (Die der Seekrankheit zugrunde liegenden Störungen und Therapie dieses Zustandes.) O. Bruns.
178 *Salvarsan in Herpes Zoster Ophthalmicus. H. Gebb.
179 Whooping-Cough. (Pertussis.) E. Popper.
180 Artificial Light in Treatment of Surgical Tuberculosis. Breiger.
181 Pulsation in the Throat. (Ueber Pulsationserscheinungen in der Rachenhöhle.) F. Wagner.
182 Serodiagnosis of Syphilis. (Abderhaldensche Dialysierverfahrens.) J. Luxenburg.
183 Laws of Heredity. (Abstammungs- und Vererbungslehre im Lichte der neueren Forschung.) W. Wangerin. Commenced in No. 25.
184 Gynecologic Practice. (Diagnostische und therapeutische Ratschläge für den gynakologischen Praktiker.) R. Asch.

169. **Nodose Erythema in Connection With Scarlet Fever.**—Eichhorst has encountered two cases in which nodose erythema developed during convalescence from scarlet fever, and a third in which the erythema was accompanied by diphtheria. In both the first two cases the skin tuberculin reaction was positive. In all the cases the erythema gradually subsided, Craig, Perigal and Pollak have recently reported a case each of erythema *nodosum* following measles.

171. **Death After Intravenous Injection of Neosalvarsan.**—Frühwald cites the compilations of fatalities under neosalvarsan published by Tomasczewski and in Wechselmann's and Mentberger's pamphlets—a total of 29 cases, and the neosalvarsan, he says, must unquestionably be incriminated in 15. The symptoms were either those of toxic myelitis or encephalitis, and the new case he reports in detail belongs in this latter category. An otherwise healthy girl of 18 with secondary manifestations of syphilis in face, mouth and genitals, was given an intravenous injection of 0.75 gm. neosalvarsan in 2 c.c. distilled water, repeated five days later. The seventh day the girl was found unconscious and died in twelve hours.

175. **Acute Congestion of the Liver.**—Fels relates that when he found the liver much enlarged and very painful on pressure in the two cases reported, he took for granted some serious liver affection and informed the family of his grave prognosis. One patient was a girl of 4, the other an active woman of 68. The first had been taken suddenly with severe gastro-enteritis which yielded soon to treatment while the liver tumor persisted for a week and then all returned to normal. In the second case the chilliness and headache were followed by pain as of gall-stone colic and the liver was intensely painful and enlarged until it resembled the enlarged spleen of leukemia. Here too his grave prognosis was contradicted by the subsidence of symptoms and nearly complete retrogression of the liver tumor. These cases belong in the group of "peracute stasis liver" described by Ortner, as summarized in these columns Nov. 1, 1913, p. 1670.

176. **The Thymus.**—Von Haberer writes that the thymic-lymphatic status is unusually common in his region (Tyrol) and simple goiter is often accompanied by enlargement of the heart, tachycardia and other symptoms suggesting abnormal thymus functioning, and the thymus was always found enlarged in such cases. He excised part of the thymus in 20 cases of the kind, and always with the best effect. His experience confirms the assumption that both thymus and thyroid are responsible for Basedow's disease, the clinical picture being determined by the degree of involvement of each, the thyroid playing on the sympathetic, the thymus more on the vagus nervous system. In a case reported with illustrations a persisting thymus was suggested in a man of 29 by the extremely tall growth, the pallor, infantile genitals and growth of hair, the unusual development of the follicles at the base of the tongue, and dulness extending each side of the manubrium; palpation confirmed the presence of a large thymus. A fracture of the radius had healed in a vicious position and required correction but, before attempting this, Haberer operated on the thymus which proved the largest he had ever encountered. The thymus-reduction operation was easily done and the patient speedily recovered and then bore without harm the general anesthesia and operation on the radius. Haberer knows of no other case on record in which an operation was done on the thymus on the basis of the clinical diagnosis alone.

177. **Seasickness.**—Bruns made 172 tests of over 100 subjects in the revolving chair and found that the symptoms

induced were identical with those of seasickness. He accepts this as demonstrating that seasickness is a reflex phenomenon elicited in the predisposed by the unusual conditions in the apparatus for equilibration. Before applying the revolving experiments he tested the individual excitability of the cerebral and spinal nervous system and of the vegetative autonomic system. From the degree of excitability determined by these and other tests he was able to predict whether "seasickness" would follow or not when the man or woman was whirled around. Means to reduce this excitability are theoretically indicated during and to ward off seasickness; Fischer's recommendation to inject 1 mg. atropin during an attack is logical as this deadens the sensibility of the terminals of the vagus nerve. Bruns found that the atropin had a decidedly beneficial action and retarded the appearance of the seasickness when given as a preventive. During the attack it seems to act by stimulating the central nervous system rather than by paralyzing the peripheral nerves. If this is the case, caffein might be substituted for it here, or other drugs to combat the prostration and collapse during the attack.

178. **Salvarsan for Herpes Zoster.**—Gebb reports two cases of very severe herpes zoster starting in one eye; he made an intravenous injection of 0.45 gm. neosalvarsan or of 0.28 gm. salvarsan and a marked change for the better was manifest in forty-eight hours, soon followed by complete recovery. The patients were a man and a woman of about 60. The effect realized by the salvarsan suggests a possible infectious origin for the herpes zoster.

Monatsschrift für Geburtshülfe und Gynäkologie, Berlin

June, XXXIX, No. 6, pp. 751-864

185 The Uncontrollable Vomiting of Pregnancy. (Hyperemesis Gravidarum.) O. Bondy.
186 Serodiagnosis of Pregnancy. E. Puppel.
187 Proteolytic Serodiagnosis in Gynecology and Obstetrics. F. Heinemann.
188 Topographic Palpation of Ileocecal Region, Especially with Displaced Tube. T. Hausmann.
189 *Turpentine in Prophylaxis and Treatment of Puerperal and Gynecologic Infections. H. Cramer.
190 Surgical Treatment of Inflammatory Disease of the Adnexa. L. A. Kriwsky.
191 Eye Symptoms with Pregnancy Kidney Trouble. Adam.

189. **Turpentine in Gynecology and Obstetrics.**—Cramer has used turpentine successfully in many cases of infected abortion. The uterus is swabbed with turpentine after curettage. He gives temperature charts from eight cases showing the sudden decline in temperature after the treatment. He describes one case of placenta praevia in which there was a putrid discharge that stopped after the twenty-four hour application of a turpentine tampon. He also uses it to disinfect the vagina before operations for cancer and prolapse. He has never witnessed any toxic effect from the turpentine.

Monatsschrift für Kinderheilkunde, Leipzig

XIII, No. 1, pp. 1-68

192 Effect of Epinephrin on the Sympathetic Nervous System of the Infant. G. Mogwitz.
193 The Normal Blood-Pressure in Children. E. Nirrnheim.
194 Disturbances of Sleep in Children. (Schlafstörungen im Kindesalter.) F. Hamburger.
195 Clinical Picture of Bacillary Dysentery in Infants and Children. (Bazilläre Ruhr im Säuglings- und Kindesalter.) K. Blühdorn and R. Schild.
196 Rumination in Infants. J. Peiser.

Münchener medizinische Wochenschrift, Berlin

June 23, LXI, No. 25, pp. 1377-1432

197 *Psychotherapy for Children. T. Gött.
198 Relations between General Nervous Symptoms Early in Syphilis and the Findings in the Spinal Fluid. W. Wechselmann and E. Dinkelacker.
199 Tuberculosis Vaccine. (Tuberkuloseimpfstoff.) J. M. Albahary.
200 *Dialysis Serodiagnosis of Cancer. A. Schawlow.
201 Acute Appendicitis during Pregnancy; Five Cases. Wanner.
202 Hemiplegia during Typhoid; Recovery. G. Wulf.
203 The Findings in the Spine with Chronic Ankylosis. (Wirbelsäulenversteifung.) E. Fraenkel.
204 *The Salvarsan Fatalities. (Die Salvarsantodesfälle und ihre Ursachen mit Berücksichtigung der Salvarsanschäden.) A. Schmitt. Commenced in No. 24.
205 Quacks as Medicolegal Experts. (Kurpfuscher als ärztliche Sachverständige vor Gericht.) O. Neustätter. Concluded in No. 26.
206 Propaganda for Reform. (Auswüchse der modernen Heilmittelproduktion.) C. Mannich.
207 Precursors of the Red Cross. (Humanitäre Bestrebungen im Kriege vor dem Roten Kreuz.) E. Haendcke.
208 The Price of Salvarsan. P. Ehrlich.

197. **Psychotherapy for Children.**—Gött emphasizes the necessity for systematic and scientific utilization of the principles of psychotherapy which in its intuitive, instinctive form has been applied from the very beginning of medicine. It is especially useful for children on account of the frequency and importance of neurotic and psychogenic symptoms and clinical pictures at this age. He compares conditions to a chord with one discordant note; with a good ear for music the discordant note can be detected and corrected in one of several ways unless the instrument is hopelessly defective, and even then it may be possible by transposing the chord to eliminate the discord. He has found hypnosis the most effectual measure to cure enuresis, and states that even Dubois confesses that he sometimes uses hypnosis for this purpose.

200. **Serodiagnosis of Cancer.**—Schawlow says that negative findings were obtained in only 7.5 per cent. of 40 gastric cancers and in 6.36 per cent. of 64 cases of malignant disease elsewhere. The findings contradicted the course of the cases only in 9 of the total 104 cases and these were all in the early months of the research.

204. **Fatalities after Salvarsan.**—Schmitt has been sifting and analyzing the 274 cases on record in which death followed salvarsan treatment. He shows that in a large proportion of cases there was no connection between the drug and the fatality; in others the dosage was excessive or the intervals too brief. The dose even for vigorous young men should not be over 0.4 or 0.5 gm. and for women 0.3 or 0.4 gm. and the interval between doses should never be less than a week.

Wiener klinische Wochenschrift, Vienna

June 11, XXVII, No. 24, pp. 833-876

209 Success of Albumin Milk in Infant-Feeding. (Eiweissmilchernährung im Hause und im Spital.) E. Sluka and B. Sperk.
210 Differentiation of Bacteria by Protective Ferments Not Practicable. P. Kirschbaum and R. Kohler.
211 Experimental Research on Action of Arsenic on Organs. K. Ullmann.
212 Negative Results of Salvarsan in Hog Cholera. O. Baum and G. Herrenheiser.
213 *Stomach Changes in Secondary Phase of Syphilis. (Sekundäre Syphilis und Magenveränderungen.) H. Neugebauer.
214 Case of Poisoning from Luminal. (Luminalvergiftung.) J. Ungar.
215 Horizontal Ventilation by "Differential Aeration;" Knapen Method. M. Setz.

June 18, No. 25, pp. 877-924

216 Elimination of Lactic Acid in Urine and Its Connection with Carbohydrate Metabolism. (Milchsäureausscheidung im Harne und ihre Beziehungen zum Kohlehydratstoffwechsel.) O. v. Fürth.
217 *Dogs' Lungs after Seven Months of Induced Pneumothorax. O. Frank and N. v. Jagic.
218 Action of Digestive Ferments on Fish Poison. (Einwirkung der Verdauungsfermente auf das sogen. Fischgift.) S. W. Konstansoff and E. O. Manoiloff.
219 The Protective Ferments in Antitoxins. (Nachweis von Abwehrfermenten in antibakteriellen Immunseren.) F. Schenk.
220 Pathogenesis of Ileus. R. Vogel.
221 Advantages of Dispensaries for Surgical Tuberculosis. M. Jerusalem.

213. **Gastric Disturbances of Syphilitic Origin.**—Neugebauer examined the stomach functioning in 200 syphilitics in the secondary stage and found manifest hypoacidity in 62 per cent., while in 18 there was total lack or only traces of free hydrochloric acid. In 17 per cent. hyperacidity was found. The patients were all young men between 20 and 25, healthy until syphilis had been acquired. Under treatment of the syphilis the gastritis improved while it did not seem to be modified by treatment of the stomach trouble alone. The syphilitic origin of the gastritis was confirmed by the abnormal amounts of mucus, alimentary galactosuria and other signs of syphilis and by the efficacy of specific treatment. He urges in conclusion the advisability of a tentative course of antisyphilitic treatment in all puzzling cases of stomach trouble.

217. **Lung not Permanently Injured by Induced Pneumothorax.**—Therapeutic right pneumothorax was induced in two dogs and kept up complete for seven months. The lung then was found compressed to two-thirds the size of the other lung, but most of it expanded to its normal extent when inflated. Only the upper lobe was left permanently atelectatic. Slight hypertrophy was evident in the right ventricle but so slight as to be negligible. The changes consequent on the induced pneumothorax were on the whole so insignificant that Frank and v. Jagic assert that the field for this method of treatment is much enlarged thereby, as it can be applied without fear of injury to sound parts of the lung even in incipient pulmonary tuberculosis.

Zeitschrift für Kinderheilkunde, Berlin

May, XI, No. 12, pp. 81-190

222 Caloric Requirement for Infant's Nutrition. (Kraftbedarf des Säuglings.) O. Heubner and S. Samelson.
223 Albumin Content of the Blood in Tuberculous Children. B. Salge and E. Nast.
224 Serum of Patients with Rachitis or Tetany Does Not Digest Gland Tissue. (Das Dialysier-Verfahren Abderhaldens bei Rachitis und Tetanie.) H. Beumer.
225 Lack of Uniformity in the Caloric Requirements of Infants. (Klinische Beobachtungen über die calcrische Betrachtungsweise der Säuglingsernährung.) E. Mayerhofer and F. Roth.
226 Reaction of Tuberculous Foci in the Skin to Tuberculin. H. Koch and W. Schiller.
227 Volatile Fatty Acids in the Intestine of Normal Infants and Those with Gastro-Intestinal Disturbances and Their Relation to Disturbance in Metabolism. (Pathogenese der Verdauungsstörungen im Säuglingsalter. VIII.) H. Bahrdt and S. McLean.
228 Transverse Striation in the Roentgen Picture in Myxedema. (Bedeutung der Epiphysenschatten beim Myxödem.) F. Goetzky and F. Weihe.

Zeitschrift für Urologie, Berlin

June, VIII, No. 6, pp. 433-528

229 The Limits for Nephrectomy. F. Legueu.
230 Surgical Treatment of Hypospadias. A. Pousson.
231 *Technic for Nephrectomy. (Zwei neue Gesichtspunkte in der Frage der Nephrektomie wegen Nierentuberkulose.) F. Kidd.
232 Diagnosis of Nocturnal Enuresis. A. Alexeieff.
233 Lipoma of the Epididymis. (Lipome des Nebenhodens.) H. Wildbolz.
234 Acute Septic Nephritis. (Niereneiterung.) H. v. Haberer.
235 Separation of Horse-Shoe Kidney into Two Practically Normal Organs. (Fall von Trennung einer Hufeisenniere.) H. Brongersma.
236 Hyperalgetic Zones and Herpes Zoster with Kidney Disease. C. Adrian.

231. **Technic for Nephrectomy.**—Kidd insists that when conditions do not permit catheterization of the ureters and cystoscopy, with a tuberculous process in the kidney, we must not hesitate to open up the pelvis to inspect one or both ureters as they pass through this region. A two-inch incision is ample for the purpose, made over the supposedly sound ureter. The ureter is exposed and palpated between the fingers. It may be necessary to open up both ureters in this way, but the information thus derived is of paramount importance. He operated in six cases on information thus derived, and with the happiest results. In addition Kidd states that the way to ensure healing without suppuration after nephrectomy is to remove the kidney with the perirenal fat and fascia intact.

Zentralblatt für Chirurgie, Leipsic

June 20, XLI, No. 25, pp. 1065-1104

237 When to Operate for Hard Gastric Ulcer. (Zur Indikationsstellung der operativen Behandlung des Ulcus kallosum ventriculi.) E. Payr. (Zur operativen Behandlung des Sanduhrmagens infolge Ulcus der kleinen Kurvatur.) A. Wagner.

June 27, No. 26, pp. 1105-1144

238 *Roentgen Ray Helps to Heal Fractures. M. Fraenkel.
239 Treatment of Bilateral Ankylosis of Lower Jaw. (Neues Verfahren zur Beseitigung einer beiderseitigen Ankylosis ossea des Unterkiefergelenkes.) W. Mysch.
240 Plastic Bone Operation after Laminectomy. O. Vulpius.

238. **Stimulating Doses in Roentgenotherapy of Fractures.**—Fraenkel emphasizes the therapeutic importance of the Roentgen rays applied in doses only just strong enough to have a stimulating action. With this *Reiz* dose he has often found it possible to start reabsorption of pleuritic and peritonitic adhesions and start tuberculous glands on the road to a cure. Many tissues and organs as long as they are in a normal condition do not seem to be affected by the Roentgen rays, but when there is already a physiologic irritation then the stimulus from the Roentgen rays or direct sunlight is soon apparent. The effect was remarkable, he states, in eight cases of fracture; callus production and consolidation proceeded with amazing rapidity. The crushed bone was "hanging by a thread" in two cases, both in children, and amputation seemed the only resource, but under the Roentgen exposures consolidation was complete in eight or ten days.

Zentralblatt für Gynäkologie, Leipsic

June 20, XXXVIII, No. 25, pp. 897-928

241 Simplification of Serodiagnosis of Pregnancy. (Vereinfachung der Schwangerschaftsdiagnose nach Abderhalden.) P. Hussy.
242 Classic Cesarean Section: Thirty Cases. A. N. Rachmanow.

June 27, No. 26, pp. 929-960

243 Vicarious or Complementary Menstruation. A. Hirschberg.
244 *The Roentgen Ray in Treatment of Chlorosis. (Die Reizwirkungen der Röntgenstrahlen und ihre therapeutische Verwendung.) M. Fraenkel.

244. **Roentgenotherapy of Chlorosis.**—Fraenkel reports a case of pronounced exophthalmic goiter in a woman of 34 which showed great benefit under fractioned Roentgen exposures of the neck and ovary region. The gradual arrest of menstruation which seems to accompany the onset of Basedow's disease suggests that hypofunctioning on the part of the ovaries opens the portal to exophthalmic goiter, and that means to restore normal functioning to the ovaries will aid in curing the Basedow. His experience in a number of cases of chlorosis with symptoms suggesting mild Basedow and hemoglobin only 48 or 50 per cent. has amply confirmed this assumption, he says. The hemoglobin ran up from 48 to 78, 80 or 85 in five cases of chlorosis in which he had the ovaries exposed, eight sittings, each one-half E.O. with no *other treatment*.

Gazzetta degli Ospedali e delle Cliniche, Milan

June 23, XXXV, No. 75, pp. 793-800

245 Rat-Bite Disease in Italy: Two Cases. (Sokodu.) W. Zannini.

Riforma Medica, Naples

XXX, Nos. 24-25, pp. 645-700

246 *Adiposis Dolorosa. (Malattia di Dercum.) P. Biffis.
247 *Uremic Polyneuritis. A. Martiri.
248 Granulations in Lymphocytes Taking Blue Stain. (I linfoidi azzurrofili.) F. Radano and G. L. Della-Porta.
249 Surface Tension of Blood Serum after Operations on Adrenals. (La tensione superficiale del siero di sangue in alcuni stati surrenali sperimentali.) V. Giamberardino.

246. **Adiposis Dolorosa.**—Biffis reports a case of Dercum's disease in a woman of 48, previously healthy. The first lipomas were noticed at the age of 38; they were not painful at first. The enlargements are generally symmetrical and when there is no lymphoma to correspond on the other side yet the corresponding spot is painful on pressure. Under the influence of a hot bath the spontaneous pain was arrested for several hours, as also under the influence of aspirin or pyramidon, but the condition as a whole did not seem to be modified by any measures during the two months the patient was under observation. Biffis also relates the complete recovery of another patient, the adiposis dolorosa gradually completely subsiding and with it an alcoholic polyneuritis. Biffis calls attention to this case as sustaining the assumption that Dercum's disease is essentially a neuritis.

247. **Uremic Polyneuritis.**—Martiri's patient was a woman of 66 with parenchymatous nephritis. The symptoms of irritation of the nerves gradually subsided in the course of two months, but the muscles in both legs and arms developed pronounced atrophy. The clinical picture suggested poliomyelitis at first, but this was excluded by the symmetrical distribution of the neuritis, the slow and gradual onset and gradual subsidence, the absence of fibrillary contracture and bulbar symptoms, the curability, and the participation of the optic nerve to a slight extent. There were no symptoms of

uremia otherwise, but the advanced kidney disease suggests a connection between it and the polyneuritis, especially as the latter improved under treatment of the kidney trouble.

Brazil-Medico, Rio de Janeiro

June 1, XXVIII, No. 21, pp. 203-210

250 Experimental Research on Apnea. (Technica para o estudo da apnea.) M. Ozorio.
251 Yellow Fever in Brazil. (A febre amarella em Manaos.) T. Torres. Commenced in No. 18.

Pediatria, St. Petersburg

VI, No. 4, pp. 245-328

252 *Autoserotherapy in Pleurisy. A. S. Artamonoff.
253 Measures for Infant Welfare in Rural Districts. Z. I. Klibanskaya.
254 Favorable Experiences with Albumin Milk in Infant Feeding. (O primienenii bielkovago moloka.) A. G. Rudnik.

252. **Autoserotherapy in Pleurisy.**—Artamonoff applied autoserotherapy in 21 out of 155 cases; in 41 other cases various drugs were used in treatment, and in 93 merely hygiene-dietetic measures. It was impossible to detect any influence from the autoserotherapy on the course of the pleurisy in any of the cases in which there were signs indicating a tuberculous origin. The night sweats and temerature were not modified. The tabulated details show t none of the measures applied seems to have shortened course of the pleurisy.

Russky Vrach, Petersburg

XIII, No. 9, pp. 289-324

255 *Action of Poisons on the Vessels in the Lungs. V. I. Berezin.
256 *Hemorrhagic Gastritis. (Coccemia chronica permanens.) B. P. Varipaeff.
257 Chemotherapy of Cancer. R. S. Krim.
258 *Frequency of Gall-Stones. E. R. Hesse.
259 *Etiology of Nocturnal Incontinence of Urine. R. M. Fronstein.
260 Leishmaniosis in Russia. N. K. and V. L. Yakimoff and N. I. Shokor. Commenced in No. 8.

255. **Action of Poisons on the Vessels in the Lungs.**—Berezin studied on rabbits the action of poisons on the vessels of the lungs, by Brodie's method; fifty-three experiments were made in all, using epinephrin, nicotin, caffein, calcium chlorid, pilocarpin and atropin. Epinephrin produced a marked vasoconstricting action on the peripheral vessels, but did not act on the pulmonary vessels at all, except that in some it caused vasodilatation. Nicotin, pilocarpin and calcium chlorid produced vasoconstriction of the pulmonary vessels. Caffein caused at first constriction of the pulmonary vessels, followed by dilatation. Atropin did not seem to influence the pulmonary vessels, but if they were previously constricted by pilocarpin or hystamin, atropin put an end to this vasoconstriction.

256. **Hemorrhagic Gastritis.**—Varipaeff found in the blood of an 11-year-old patient with hemorrhagic gastritis a micrococcus in the form of a diplococcus or streptococcus. He is inclined to think that this micrococcus is liable to cause all the severe symptoms of hemorrhagic gastritis, just as it can be caused by any severe infection such as smallpox, typhoid, pyemia, diphtheria, malignant malaria, Hanot's cirrhosis of the liver, etc.

258. **Frequency of Gall-Stones.**—Hesse studied the postmortem material of the large Obuchow Hospital of St. Petersburg in regard to the frequency of gall-stones in that city. The material comprised 17,402 necropsies in the last ten years, and refers mostly to the laboring classes. Only 378 gall-stone cases were found recorded, that is, 2.17 per cent. while from the collective statistics of 19 European and American authors, with 80,802 necropsies, the frequency of gall-stones averaged 5.94 per cent. Males were found less frequently affected than females (0.73 per cent.; 4.75 per cent. for females), and the sixth decade was the most affected. In 84 per cent. of the cases the gall-stones had given no sign of their presence during life. Cancer was found in 10 cases.

259. **Nocturnal Incontinence of Urine.**—Fronstein is of the opinion that for nocturnal incontinence of urine in children and adults there must always be some anatomic lesion as its cause. His investigations disclosed almost invariably balanitis or congenital stricture of the urethra with atony of the bladder as the result, or adenoids. In some cases spina bifida occulta seemed to be responsible. He pleads for more laborious and scientific examination in order to avoid mistakes in the treatment of enuresis.

Nederlandsch Tijdschrift voor Geneeskunde, Amsterdam

LVIII, No. 8, pp. 529-612

261 Spontaneous Rolling up of Eyeball on Attempt at Adduction with Congenital Paralysis of the External Rectus Muscle; Two Cases. (Retractio bulbi.) J. P. A. Hoefnagels.
262 *To Hasten Recovery after Industrial Accidents. (Arbeidsverschaffing aan door een ongeval getroffenen.) J. A. Korteweg.

No. 9, pp. 613-696

263 *Hemorrhages with Certain Internal Diseases. (Over bloedingen bij eenige inwendige ziekten.) P. G. J. Duker.
264 *Hairy Nevis Excised; Two Cases. (Behandeling van moedervlekken.) H. J. Lameris.

262. **To Hasten Recovery after Industrial Accident.**—Korteweg says that the legislation (in the Netherlands) on workman's compensation has had the effect of lengthening the period of convalescence after an industrial accident. It would be far better for the man if he were at work, but employers do not like to hire workmen even temporarily damaged. Korteweg therefore proposes as a makeshift that a full sick pension should be paid to the workman on condition that he works all day in the employ of his employer or the latter's representative, and he outlines ways and means to render this practicable.

263. **Hemorrhages with Internal Diseases.**—Duker explains the tendency to hemorrhage in pernicious and aplastic anemia, typhoid, acute leukemia and relapsing fever by the changes in the blood characteristic of the diseases. This alters the composition of the blood to such an extent that the coagulation process is interfered with.

264. **Treatment of Disfiguring Nevus.**—Lameris gave illustrations of two cases in which he excised the verrucous nevus, scattered with hairs. The defect left was too large to be repaired with Thiersch flaps so the wound was covered with gauze compressing the tissues well. A piece of tinfoil of the proper size was placed on the abdomen and a piece of skin to correspond was cut out of the abdominal wall and transferred to the defect in the face. The photographs taken one and two years afterward show scarcely a trace of the former disfigurement. The patients were girls of 6 and 21.

Hospitalstidende, Copenhagen

June 24, LVII, No. 25, pp. 793-816

265 Salvarsan plus Mercury in Treatment of Syphilis. H. Boas. Commenced in No. 24.

Hygiea, Stockholm

LXXVI, No. 10, pp. 561-624

266 *Exophthalmos. (En orientering i det Basedowska exoftalmusproblemet jämte några ord om den glatta muskulaturen omkring bulben.) C. Hesser.
267 *Urochromogen and Diazo Reactions in Pulmonary Tuberculosis. A. Gullbring.

266. **Exophthalmos.**—Hesser discusses the cause and mechanism of the exophthalmos in Basedow's disease, remarking that none of the theories yet presented explains it adequately. On the basis of his extensive experience as prosector he analyzes each of the possible factors in turn.

267. **Urochromogen and Diazo Reactions in Pulmonary Tuberculosis.**—Gullbring applied both tests in 168 cases of pulmonary tuberculosis; in the total number there were only 2 cases in which the diazo was positive plus negative urochromogen. In 114 cases the findings paralleled each other, both negative in 88 and both positive in 26. In all the others (37 per cent.), urochromogen was positive with the negative diazo and in practically all these cases, besides the pulmonary lesions, there were signs of amyloid degeneration of internal organs. The urochromogen test was positive in 90 per cent. of the amyloid cases; the diazo in only 20 per cent. The majority of all the 168 patients were in an advanced stage of the tuberculosis.

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PARENTERAL PROTEIN DIGESTION[*]

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INTRODUCTION

The units of life in our bodies are the cells of which our organs and tissues are composed. In order that we may be in health, all the cells of our bodies must be in normal condition and must function in harmony. Inasmuch as these cells are living, growing and multiplying, they must have a supply of normal food, and since these cells are made up of protein to a large extent they must be supplied with protein food. The digestive functions of the alimentary canal have been developed for the purpose of preparing proteins for the body-cells to feed on. The proteins of our food are normally broken up in the digestive tract into amino-acids. These are absorbed through the intestinal walls and serve for the nourishment of the body-cells. The blood and lymph carry to all the cells of the body the prepared and absorbed protein split products. Each kind of cell selects from these products such portions as it needs in its own metabolism. It sometimes happens that proteins reach the blood and lymph without being acted on by the digestive juices of the alimentary canal. On a small scale this is constantly happening. We absorb minute quantities of protein through the mucous membrane of the respiratory tract, and in ordinary health it may happen that small amounts of undigested or imperfectly digested proteins are absorbed through the intestinal wall. In the therapeutic employment of serums and vaccines undigested protein, sometimes in large amount, is introduced into the circulation. In case of infection, living proteins find their way into the body and there grow and multiply, converting the simple soluble proteins of the body-fluids into complex, foreign proteins. When foreign proteins find their way into the body by any of these methods they must be digested by the agency of ferments supplied by the body-cells. This process we designate as "parenteral digestion" in contradistinction to the normal "enteral digestion" which goes on in the alimentary canal. Up to the present we know but little concerning the action of the parenteral proteolytic ferments or their digestive products. We know that at one stage in enteral digestion the protein molecule yields an active poison, but in normal digestion this is split into harmless bodies before absorption. In parenteral digestion this poison is set free in the blood and tissues and gives rise to the symptoms of the infectious diseases.

How to control and modify parenteral protein digestion is now one of the big problems in experimental medicine.

The body-cells feed on the pabulum brought to them by the blood and lymph. The wandering cells, such as the leukocytes, may go in search of food, and observation has shown that they are attracted to localities in which there is accumulation of protein material, as to the intestinal walls during the process of digestion, to local infections and to points where non-diffusible proteins, living or dead, are injected. But most cells of the animal body are fixed and can act only on pabulum brought to them. The blood and lymph carry in solution both proteins and protein split products, the latter as amino-acids. Of these split products each kind of cell selects such as it may require in its metabolic process. To what extent body-cells are nourished by the amino-acids absorbed as such from the alimentary canal we do not know. Indeed, until recently it was believed that all the amino-acids formed in enteral digestion are synthesized into albumins and globulins either during absorption or soon thereafter. That this is the fate of the greater part of these protein split products is certainly true. The diverse proteins of the food are split into amino-acids in the intestine and synthesized into specific proteins, peculiar to the species, and these are distributed through all the tissues by the blood and lymph and constitute the protein food-supply of the cells. Therefore, the bulk of the protein food carried to the various organs is the same and each kind of cell must split this in such a way that the cleavage products can be utilized in its own particular structure. The liver-cell must split the albumins and globulins, one or both, in such a way as to serve its own needs, and the pancreatic cells must obtain from the same raw material, building stones cut to fit its peculiar masonry. The agencies with which this work is accomplished are known as ferments. We do not know the exact nature of any ferment. We can recognize their presence only by their effects. There must be as many kinds of ferments as there are kinds of cells, and each ferment is specific and cleaves the substrate along its own peculiar lines. From this it must follow that the cell peculiar to each organ in the animal body supplies its own specific ferment or ferments and it is by virtue of this that the cell continues to live. This conclusion reached by reasoning has been demonstrated by experiments.

DIGESTION IN UNICELLULAR ORGANISMS

Experimental studies of digestive processes in unicellular and other low organisms have been numerous and the literature thus developed is too voluminous to be reviewed in detail. I will content myself with notice of some of the more important contributions such as enable us to understand cellular digestion in general. Leidy[1] made many observations on digestion in amebas. In the first place he called attention to the fact that amebas feed on algae and that they are most numerous where their food-supply is most abundant. He watched the ingestion of the food which is accomplished by two pseudopodia which enclose the infusorian which now lies in the vacuole and gradually loses all structure and ultimately disappears. Large amebas (*A. proteus*) feed on smaller species (*A. verrucosa*). Engulfed algae gradually turn brown while being digested. Kölliker[2] made similar observations and found the average time between ingestion and the extrusion of the indigestible portion to vary from two to six hours. Carter[3] points out that the ingestion, digestion and egestion of food substances distinguish amebas from plant-cells. Haeckel[4] regards the intracellular digestion in rhizopods as a chemical process, but fails to make any satisfactory demonstration of this belief. Greenwood,[5] from his studies of digestion in amebas, comes to the following conclusions: 1. Starch is ingested on contact but is not digested. It may be retained as long as six days, but is then ejected without change. 2. In regard to fat he is left somewhat in doubt. Milk globules are included, but after twenty-four hours they give normal and ready reaction with osmic acid. The ultimate disposal of fat was not satisfactorily determined. 3. Naked proteins (monads) are quickly and thoroughly digested by amebas. 4. Shielded proteins (enclosed by cellulose walls, such as *Torulae*) are slowly digested without break in the cellulose wall. The last point is important. It shows that the ameba elaborates a digestive fluid which penetrates the cellulose wall and digests the contents.

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[*] Read before the joint meeting of the Section on Obstetrics, Gynecology and Abdominal Surgery, the Section on Pharmacology and Therapeutics, and the Section on Pathology and Physiology at the Sixty-Fifth Annual Session of the American Medical Association, Atlantic City, June, 1914.

Next come the highly important experiments of le Dantec,[6] which show that in amebas and all infusoria, so far as tested, intracellular digestion is accompanied by the development of acid. The fluid of the vacuole surrounding the captured and ingested food becomes acid. The nature of this acid has not been positively determined, but there is no proof that it is not hydrochloric acid, and the weight of experimental evidence is in favor of its being this mineral acid. It must be understood, however, that as in the gastric juice, the acid is not the sole and effective agent. Any substance ingested by amebas, without regard to its nutritive character, starts the secretion of the acid, but only nutritious substances are digested. It follows, therefore, that we must assume the existence of digestive ferments which are active in acid fluids as is the case with the pepsin of the gastric juice. It should be stated that Krukenberg[7] found that the glycerin extract of the cellular substance of certain unicellular organisms contains a proteolytic ferment which is active only in the presence of acid.

There is no animal from the lowest to the highest, so far as investigation has been made, which does not elaborate one or more proteolytic ferments. The only organisms in which the truth of this assertion might be questioned on *a priori* grounds are parasites, which might be supposed to depend on their hosts for predigested food. Indeed, some of the first studies made on digestive processes in certain intestinal worms failed to detect the presence of specific ferments, but more thorough investigations have shown that intestinal worms elaborate proteolytic ferments which serve their own metabolism and antiproteolytic bodies which protect them against the digestive fluids of their hosts. The universally distributed proteolytic ferments of the animal kingdom are divided into those which are active in acid, and those active in alkaline solutions. The former are generally designated as pepsins and the latter as trypsins.

In unicellular organisms the chief digestive processes are intracellular. Indeed, with many of these low forms of life it has not been possible to demonstrate extracellular digestion; we are not justified, however, in denying its existence. The yeast-cell secretes a diastatic ferment which rapidly acts on sugar, but its proteolytic ferment is, under normal conditions, retained within the cell in which it functions. Since no known animal can live without protein food and since every species contains its own specific proteins, each living animal must produce proteolytic ferments. As the structure of the animal body becomes complicated and differentiation takes place, certain cells are set apart to do the preliminary digestion for the whole, but each cell must digest its own special food. Therefore, Weinland[8] is right when he states that intracellular digestion occurs in all animals.

DIGESTION IN BACTERIA

It has been generally assumed that bacteria are low forms of plant life, but researches in my own laboratory, confirmed by later studies in Kossel's laboratory, show that bacteria contain no cellulose and are particulate, unshielded proteins and consequently are more nearly related to low forms of animal life. I should not classify bacteria as either plants or animals. In their life processes they are more closely related to animal life. Some bacteria, possibly all, can utilize split proteins in their metabolism, but under ordinary conditions they feed on unbroken, but relatively simple proteins. All bacteria, so far as studied, produce specific proteolytic ferments. In some, only intracellular ferments have been detected; in others only extracellular; in still others both are in evidence. The liquefying bacteria pour out proteases which diffuse widely through the medium and visibly demonstrate their activity. The abundance with which a given bacterium elaborates its protease is subject to many conditions. As a rule, the richer the medium in carbohydrates, the less abundant is the secretion of protease. It is probable that the presence of certain proteins in the medium stimulate the flow of the digestive agent, though, so far as I know, this has not been experimentally demonstrated. From analogy with other living cells, this is the natural assumption. For the most part bacterial proteases act in alkaline solution and, therefore, are classified as trypsins. This, however, is not without exception. Many bacteria which grow in milk and milk products digest proteins in acid mediums.

There are two points about the action of bacterial proteases which I feel justified in emphasizing. One is the fact that their activity is delayed by quinin, antipyrin and other antifebrile medicaments. This

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1. Leidy: Fresh Water Rhizopods of North America.
2. Kölliker: Ztschr. f. wissensch. Zool., 1849.
3. Carter: Ann. Nat. Hist., 1863.
4. Haeckel: Ztschr. f. wissensch. Zool., 1865.
5. Greenwood: Jour. Physiol., vii, 253.
6. Le Dantec: Ann. de l'Inst. Pasteur, 1890, 1891.
7. Krukenberg: Kuhne's Untersuch., 1882, ii.
8. Weinland: Oppenheimer's Handbuch der Biochemie.

may in part at least explain the action of these drugs. The second is the fact that so far as experimental evidence has gone, no bacterial protease is capable of digesting living protein. This seems to me of great importance. The prevailing idea among morphologic pathologists seems to be that the lesions of the infectious diseases are due to the digestive action of the bacterium on the body-cell. The typhoid bacillus is supposed to feed on the walls of the intestine and cause ulceration, and the spirochetes are believed to induce the lesions of tertiary syphilis in like manner. Everything known up to the present time concerning the digestive action of bacteria is contradictory to these views. It seems quite certain that during the period of incubation of an infectious disease, the invading organism supplies the ferment, the simple, soluble non-organized proteins of the body of the host constitute the substrate, the process is largely synthetic and constructive, leading to the conversion of the simple proteins of the host into the more complex, cellular proteins of the invading organism, no marked protein cleavage occurs, no poison is set free and consequently there is no recognizable disturbance in the health of the host. On the other hand, during the active stage of an infectious disease the cells of the host supply the ferment, the complex, cellular proteins of the invading organism constitute the substrate, the process is essentially analytic and destructive, and the protein poison is set free and causes the symptoms and lesions of the disease.

It should be stated that the synthetic action of bacterial proteases, such as I have spoken of as occurring in the growth and multiplication of bacteria, whether in the test-tube or in the body, is not an assumption, but a demonstrated fact. The peptone of the culture-medium is built into bacterial cellular protein. Zak[9] has shown that pyocyaneus protease *in vitro* synthesizes simple proteins into more complex ones.

LEUKOCYTIC DIGESTION

The phagocytic theory of Metchnikoff and the work which that distinguished investigator has done in its support are too well known to need statement, and I will confine myself to a brief review of what has been done in the study of leukocytic digestion. Leber[10] showed that sterile pus liquefies gelatin and digests fibrin. Blood-serum plates are now employed in determining the relative digestive action of leukocytes from different sources. A platinum loop carrying a few leukocytes is brought into contact with the plate at several points and the plate is then kept at from 50 to 55 C. (122 to 131 F.) for twenty-four hours. This temperature favors the digestive action of the ferments, and retards or inhibits the growth of bacteria that may be present. Each leukocytic colony digests the serum and forms a lacuna. From the depth of these lacunae the relative digestive activity of each leukocytic colony may be determined. This difference may be demonstrated by comparing the action of leukocytes from myelogenous leukemia with those from lymphatic leukemia. The blood from a case of myelogenous leukemia partially digests itself on being kept for seventy hours at 55 C. This autodigestion and the extent to which it occurs may be demonstrated by the presence and amount of albumoses formed as was first shown by Erben.[11] It should be understood, however, that normal leukocytes have a digestive action, as was first demonstrated by Pfeiffer.[12]

The protease of leukocytes may be obtained best from the blood of a case of myelogenous leukemia, by precipitating a properly prepared plasma—leukocyte mixture with alcohol, allowing to stand for some months, and then extracting the precipitate with glycerin. Similar preparations have been made from the spleen, bone-marrow and from sterile abscesses induced by subcutaneous injections of turpentine. The various methods of preparing leukocytic protease are given by Jochmann.[13] It is believed by Jochmann and others that the leukocytic protease is supplied wholly, or at least, most abundantly, from the neutrophil cells. It has been obtained from leukocytes, colostrum corpuscles, the saliva and the lochial secretion. It is supposed to digest excess of milk accumulating in the gland and possibly it may be of service to the child during the first few days of extra-uterine life. That of the lochial discharge may aid in the cleansing of the uterus.

The value of the leukocytic protease in causing resorption from wounds, in cleansing abscesses and in all local infections is well understood. It is well known that tuberculous pus, so long as it is due to an unmixed infection, is quite free from this ferment and it is believed that injections of iodoform in tuberculous, local infections bring to the site polynuclear cells which aid in effecting cure by their secretions. Whenever foreign proteins appear in the body, the leukocytes assemble and endeavor to destroy the undesired material by digesting it. It seems that the ferment is stored up largely in the leukocytes and that the most effective digestive action does not occur until the leukocytic cells disintegrate. In case of local bacterial infection many bacteria are taken into the leukocytes, and in some instances at least intracellular digestion proceeds much in the same way as it does in amebas. It is held by Müller and others that resolution in pneumonia is the result of the activity of the leukocytic protease, which becomes quickly effective from the dissolution of a large number of leukocytes. According to Bittorf[14] the urine after resolution in pneumonia quickly digests fibrin. Abnormal activity of this protease may be followed by the appearance of the digestive products in the form of albumose in the urine. This is the explanation of peptonuria in cases of chronic suppuration. When a large number of leukocytes disintegrate in a confined space the ferment set free digests any fibrin, lymphocytes and red corpuscles that may be present. The autodigestion of leukocytes leads to the production of ammonia, amino-acids and nuclein bases. Tuberculous pus does not undergo autodigestion. According to Jochmann a spleen, as large as a child's head, from a case of myelogenous leukemia, kept at 55 C., will within twenty hours break down into a dark red fluid in which the connective tissue floats. A normal spleen passes through the same change in about twice the time. The liquefied autolysate contains ammonia, leucin and tyrosin in abundance. The bactericidal action of the leukocytic protease has been studied by Nuttall, Buchner, Schattenfroh, Peterson, Kling, myself and others. One of the important questions is that of the identity of the bactericidal and the proteolytic constituents of blood-serum or of leukocytic extract. There is not time to enter the literature of this subject here.

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[9] Zak: Beitr. z. chem. Physiol. u. Pathol., 1912, x, 287.

[10] Leber: Die Entstehung der Entzündung, 1891.

[11] Erben: Wien. klin. Wchnschr., 1902, p. 276.

[12] Pfeiffer: Wien. klin. Wchnschr., 1906, No. 42.

[13] Jochmann: Kolle and Wassermann's Handbuch, Ed. 2, ii, 1301.

[14] Bittorf: Deutsch. Arch. f. klin. Med., 1913, p. 91.

It must be evident from what has been said that the leukocytes are constantly supplying the blood and bathing the tissues with an active *proteolytic* ferment. Were there no regulation of this process the body would digest itself. There is constantly in the blood an antiferment. The relation between these bodies and its regulation are among the most interesting and important matters in experimental medicine. It seems to be a well-established fact that repeated injections of a ferment into an animal leads to the production of antibody. Such bodies have been produced in this way by injections of pancreatic trypsin, pepsin, rennin and fibrin ferment, and it seems justifiable to suppose that the antiferment or antitrypsin of the blood originates in this way. Indeed, Jochmann and Kantorowicz have increased the antitrypsin of blood-serum to sixty-four times the initial amount by repeated injections of leukocytic trypsin. These investigators believe that the antitrypsin of the blood is identical with pancreatic antitrypsin, and that the former may owe its development to increase in either the leukocytic or the pancreatic trypsin. This means, of course, that the two ferments are identical and their antibodies are. There are many and diverse theories concerning the relation between leukocytic trypsin and its antibody. Laboratory methods of measuring the antitrypsin strength of blood-serum and rules are given for the interpretation of the results. Wiens[15] finds a low antitrypsin content in the blood-serum in all infectious diseases in which the polynuclear corpuscles are increased, and he regards an opposite finding as unfavorable in prognosis. Theoretically he holds that the greater the number of the polynuclear cells, the more abundantly will the trypsin be supplied and the greater the number of bacteria destroyed. Other investigators have reached radically different conclusions that is, they find that those cases do best in which the antitrypsin content is high. It seems to me that a great danger to the life of the infected man lies in the too rapid cleavage of the bacterial proteins, and at one time a rise in the antitrypsin content may save life. The relation between the leukocytic trypsin and its antibody must be a delicately adjusted one and one which fluctuates from hour to hour. Brieger and Trebing[16] and others have found the antitrypsin titer high in cancer, advanced tuberculosis, diabetes and the severe anemias, and they call it a cachexia reaction. Here again it seems most plausible that the large amount of waste protein material in the blood endangers life in case of its rapid digestion, and the large amount of antibody supplied is a protective agent. Evidently the blood is a digestive, as well as nutritive fluid, and the digestive processes taking place are regulated by a finely adjusted mechanism which at present we do not understand.

There has been for some years increasing evidence that the enzyme-inhibiting constituent of blood-serum is a lipoid. So far as I know the literature, this was first suggested by Schwartz,[17] who found that the inhibiting action of serums could be lessened by extraction with ether and restored by the addition of lecithin. Sugimoto[18] found that the extraction of serums with ether and benzol has the same effect. Jobling and Peterson[19] have apparently settled the question and reached the following conclusions: 1. The ferment-inhibiting action of the serum is due to the presence of compounds of the unsaturated fatty acids. 2. These fatty acid compounds may be removed from the serum by means of chloroform or ether. 3. Soaps prepared by saponifying the chloroform or ether extracts inhibit the action of trypsin. 4. The antienzyme action of the serum can be removed by filtering acid serum through kaolin, and can in part be restored by extracting the kaolin. 5. The decrease in strength of antienzyme in old serums is probably due to the action of serum lipase. 6. Iodin, potassium iodid or hydrogen peroxid removes the inhibiting action of the serum. 7. Soaps of the unsaturated fatty acids lose their ferment-inhibiting action when heated with serum at 70 C. (158 F.).

Leukocytes elaborate in addition to the protease, a lipase and an oxidase which we pass by since they are not germane to the subject under discussion.

Jacoby[20] and Richet[21] have shown that the liver-cells elaborate a specific proteolytic ferment, and Abderhalden[22] and his students, by the optical method, have demonstrated that: 1. Infusions of liver tissue digest liver peptone, but not peptone prepared from the kidneys or thyroid. 2. Infusions of thyroid digest thyroid peptone, but not peptones prepared from liver or kidney. 3. Infusions of kidney digest both kidney and liver peptones and to some extent that from the thyroid. 4. Infusions from muscle digest muscle peptone but not peptones prepared from liver or brain. 5. Peptone prepared from testicles is digested by infusions from testicle or from kidney. While more work along this line is highly desirable it seems safe to conclude that each kind of cell in the animal body elaborates one or more specific proteolytic ferments and that the conclusions reached by pure deduction are confirmed by experiment.

It is well established that the products of the cleavage of complex proteins by ferments vary within certain limits. A protease may digest certain proteins and have no effect on others. Some unicellular organisms feed only on certain proteins. The phyloxera feeds only on the grape-vine. Some organisms must pass one or more stages in their development as parasites in certain hosts. Examples of this kind might be multiplied, but it is well known that specific foods are essential to the life and growth of both plants and animals. I take it that this means that only certain proteins can be split along the proper lines to serve in metabolism.

The proteolytic ferments of the alimentary canal of man are capable of digesting diversified proteins, but those furnished by the cells of the blood and tissues are more limited in their action. Parenteral proteolytic ferments are of two kinds, non-specific and specific. The former are normally present in the blood and tissue, especially in the former, of all animals. They differ in kind in different species and in amount and efficiency in individuals. Their function is to break up foreign proteins that find their way into the blood and tissues. They are, within limits, general proteolytic ferments as are those of the alimentary canal; though the variety of proteins on which they can act is more limited. They constitute the most important factor in racial and individual immunity. Man is immune to most bacteria, not because they do not elaborate poisons, for every protein molecule contains its poisonous group, but because they are destroyed by the general proteolytic enzymes as soon as they enter the tissue and before they have time to multiply. Such is the leukoprotease of the polymorphonuclear cells.

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[15] Wiens: Deutsch. Arch. f. klin. Med., 1906, p. 91; Centralbl. f. inn. Med., 1907.

[16] Brieger and Trebing: Berl. klin. Wchnschr., 1908.

[17] Schwartz: Wien. klin. Wchnschr., 1909, xxii, 1151.

[18] Sugimoto: Arch. f. exper. Path. u. Pharmakol., 1913, lxxiv, 14.

[19] Jobling and Peterson: Jour. Exper. Med., 1914, xix, 459.

[20] Jacoby: Hofmeister's Beitr., 1903, iii, 446.

[21] Richet: Compt. rend., Soc. de Biol., 1903, lv, 656.

[22] Abderhalden: Ztschr. f. physiol. Chem., 1913, lxxxvii, 220, 231.

It has been shown by work in my laboratory that all proteins, bacterial, vegetable and animal, contain a poisonous group. During enteral digestion this group is, partially at least, set free, as is shown by the poisonous effect of peptone when injected intravenously; but this poison is not readily diffusible and the body is protected by the walls of the alimentary canal and a further step in the process of digestion breaks up the poison into harmless split products. When this poison is set free by parenteral digestion there is no such protection offered.

Jobling and Peterson[23] have shown that blood-serum from which the antitrypsin has been removed or neutralized is poisonous to homologous animals. In this case the blood-serum digests the proteins normal to the animal and the poison thus set free manifests its effects.

Jobling and Bull[24] find that leukoprotease digests typhoid bacilli *in vitro* with the liberation of the poison. They say:

> Freshly washed, unheated typhoid bacilli intravenously injected into dogs cause the development of definite symptoms as early as twenty minutes after the injection. Boiling for ten minutes does not destroy the toxic effects of a freshly washed bacterial emulsion. Complete solution of the bacteria (in dilute alkali) of a fresh emulsion does not prevent the removal of the toxic substance with the coagulable proteins. The action of leukoprotease splits the toxic substance to a noncoagulable state, the digested mixtures being toxic after removing the coagulable portion. The mere presence of the leukocytic ferment is not responsible for the toxicity of the filtrate from the digested mixture, and continued digestion destroys the toxicity of a previous toxic mixture. From these observations it is concluded that the toxic properties of freshly washed typhoid bacteria are not entirely due to toxic bodies that are stored in the bacterial bodies, but that these properties are due largely to products formed by hydration of the bacterial proteins through the agency of ferments present in the circulation of the animal previous to the injection, or which become mobile subsequent to the entrance of the foreign bodies into the blood-stream. Since leukocytic ferments can attack the bacterial proteins *in vitro*, it is possible that the leukocytes are a source of the ferments which are active in experimental and natural cases of intoxication with the whole bacteria.

Thiele and Embledon[25] find protein split products in the blood of animals dying of acute infection and also that the blood-serum of such animals is fatal to healthy ones when injected intravenously. Such observations seem to show quite conclusively that in the infectious diseases the invading organisms are digested, and among the digestive products there is at least one highly active poison.

THE RELATION OF PARENTERAL PROTEIN DIGESTION TO IMMUNITY AND DISEASE

One of the most important facts developed in the study of protein sensitization or so-called anaphylaxis is that the nature and activity of cellular ferments may be modified and specific ferments developed. For instance, work in my laboratory[26] has shown that the blood-serum of a fresh guinea-pig has no digestive action *in vitro* on egg-white, while the serum of an animal sensitized to this protein does digest and lead to the liberation of the protein poison. The same is true of animals sensitized to other proteins, bacterial, vegetable and animal, all of which contain the protein poison. This offers a simple and satisfactory explanation of certain forms of immunity both natural and acquired. A man has yellow fever and recovers and is then immune to this disease. During the attack, the body-cells become sensitized and elaborate a specific ferment which destroys the virus of the disease. When subsequently the man is bitten by an infected mosquito the specific ferment destructive to this virus is promptly active, the virus is destroyed before it can multiply sufficiently to disturb health and the man is immune. The virus of vaccine, an attenuated form of the small-pox virus, is inoculated into the body, sensitizes the cells and subsequently there is for a time at least immunity to this disease. A similar explanation suffices for vaccination for typhoid fever and other diseases for which effective vaccines have been discovered.

The study of protein sensitization has done much to improve our understanding of the phenomena of infection. The pathogenicity of a given virus is determined largely by two conditions. First, the virus must be able by means of its enzymes to feed on the proteins of the animal's body. This condition determines whether or not the virus may be pathogenic to a given species. Even close kinship may exist between two species and a given virus be pathogenic to one and harmless to the other. Thus, the ordinary sheep is susceptible to the anthrax bacillus, while the Algerian variety is not. Second, the secretion of the body-cells must not immediately digest and destroy the invading organism. The small-pox virus is pathogenic to the man unprotected by vaccination or by a previous attack of the disease. To the protected man this virus is non-pathogenic because the enzymes supplied by the body-cells destroy it.

When a virus is able to feed on the proteins of the host, and the latter is not protected from the former by efficient destructive agencies, the virus multiplies within its host, converting the proteins of the latter into those of its own structure, and this continues until the body-cells becoming sensitized elaborate ferments which digest and destroy the foreign protein. This process marks the active stage of the disease. When the cleavage action of the enzymes of the body-cells proceeds too rapidly the protein poison is set free in amount sufficient to endanger life. This is a brief and incomplete statement of the relation of cellular digestion to immunity and disease.

We are only on the threshold of these studies. What further investigations may develop no one can predict. Undoubtedly theories will be modified by the further elucidation of observed phenomena and those at present held may be radically changed by the discovery of new facts.

I have recently[27] written fully on the phenomena of infection.

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[23] Jobling and Peterson: Jour. Exper. Med., 1914, xix, 480.
[24] Jobling and Bull: Jour. Exper. Med., 1913, xviii, 453.
[25] Thiele and Embledon: Ztschr. f. Immunitätsforsch., 1914.
[26] Vaughan, Vaughan Jr. and Wright: Ztschr. f. Immunitätsforsch., 1912, ix, 673.
[27] Vaughan, Victor C.: The Phenomena of Infection, THE JOURNAL A. M. A., Feb. 21, 1914, p. 583; Protein Split Products in Relation to Immunity and Disease, Philadelphia, Lea & Febiger, 1913.

LIMITATIONS OF THE DIALYSIS METHOD AS A PRACTICAL TEST FOR PREGNANCY*

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When Abderhalden first announced that he had discovered a laboratory method of detecting pregnancy based on the fact that a pregnant woman's serum has the power of digesting human placenta *in vitro,* the announcement was received by the medical profession with remarkably little skepticism. One reason for its ready acceptance in good faith was the recognized high standing of Abderhalden and the vast amount of work he had done on protein metabolism. A second and more important reason was that the medical world had already been made familiar with the basic principles involved in the Abderhalden test through the work of numerous investigators during the preceding ten or fifteen years on parenteral digestion, protein sensitization, and anaphylaxis. Theobald Smith's phenomenon, Pfeiffer's phenomenon, the work of Richet and von Pirquet, and the studies of Vaughan on protein split-products, all really anticipated the discovery of serum diagnosis, just as others before Columbus argued that the earth is round. In a recent controversy over the question of priority, Hamburger claims to have published the basic facts of serodiagnosis in 903. To this Abderhalden replied that Huppert in 896 published essentially the same line of argument. That the principle of serodiagnosis of pregnancy is theoretically correct is evidenced by its immediate and universal acceptance as reasonable and probable, and the wonder grows that someone had not thought of it sooner; for on *a priori* grounds, what is more logical than the inference that the maternal blood-stream, invaded by solid or soluble placental products, will develop ferments which are choriolytic? That the mother's serum does actually contain such ferments, capable of digesting parts of the cooked human placenta *in vitro,* must now be accepted as a fact proved by thousands of tests. As to the absolute specificity of these ferments for placental proteins, there is still some doubt in the minds of a few competent observers like Pearce and Williams, Kämmerer, Flatow, Fried, Plaut, and others. Inasmuch as the last word has not been said on this phase of the subject, the question as to whether the ferments are absolutely specific for placental proteins, must in my opinion, be left open for the present, notwithstanding the protests of Abderhalden and his co-workers to the contrary.

With the exception of Jellinghaus and Losee in New York, Schwarz of St. Louis, McCord of Detroit, and half a dozen others, the number of experimenters in America who have done extensive work on the serodiagnosis of pregnancy is insignificant, while in Germany and Austria the amount of work done along this line has been prodigious. Unfortunately, some reports of work done on the pregnancy test, especially the earlier ones, must be rejected as valueless, because in some instances the wish has been so obviously the father to the thought that the author has proved whatever he set out to prove.

I have been much interested in trying to discover why so many American workers of known ability have abandoned the test after a brief and unsatisfactory experience with it. Is the test really worthless, or is the technic too difficult for the ordinary trained laboratory worker? A majority of experimenters to whom these and similar questions have been put, honestly believe the test is too unreliable to be of any practical value. It is my opinion that some of the workers were influenced to lose their enthusiasm for the test by the reflection that, after all, the making of a positive diagnosis of early pregnancy is very seldom of vital importance to the patient, as it might be, for example in carcinoma and syphilis. "Time will tell" now, as it did for our grandfathers in medicine, whether or not the woman is pregnant. This would truly be a lame excuse for indifference on our part to a laboratory proof of pregnancy. Until the laboratory test has established a better claim to our confidence, however, American clinicians, it is maintained, cannot be expected to display much enthusiasm for it, and they will continue to rely on previously known signs and symptoms, in arriving at an early diagnosis of pregnancy.

It would be manifestly improper here to go into details as to the technic of the dialysis test. Those interested are referred to the numerous original communications of Abderhalden himself, or to the excellent descriptions of the technic of the test by Jellinghaus and Losee, and by Schwarz, which are perhaps the best descriptions of the test published in English. There are, however, a few minor points of technic which in my experience are sufficiently important to justify special mention. They are as follows:

1. If the dialyzing thimbles are threaded with a fine stiff bronze aluminum wire, instead of the silk thread usually recommended, they can be handled with much greater facility.
2. Since the dialyzing tubes are not uniform in thickness, it is well to mark the different tubes with indelible ink or pencil in such a way as to indicate their relative permeability to peptones.
3. Sterile cork stoppers for the containers are superior to cotton plugs, as they prevent the evaporation of the chloroform and toluene at incubator temperature.
4. The principal control should always contain the inactivated serum from the patient's own blood, rather than that from another patient. This point has been strongly emphasized by Abderhalden himself.
5. Boiling alters the permeability of the dialyzing tubes. I have found that "pasteurizing" them in water at about 180 F. for two or three minutes is satisfactory.
6. Whatever the method used in preparing the placenta, the point of great importance is to see that the placenta preparation contains no dialyzable substance reacting to ninhydrin.
7. Finally, the test and control must be treated exactly alike (except, of course, that the latter contains inactivated serum). It is of less importance to use just so much water, placenta, serum, and reagent, than it is to use exactly the same amounts in both test and control. In making the final tests, I always boil both diffusates simultaneously, over the same flame, at the same rate, and for the same length of time.

The importance of this last precaution will be appreciated when we consider that the final test is a relative one, based in some instances on intensity of color, and, therefore, the test and control must be treated exactly alike if the result is to be at all trustworthy.

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* Read before the Section on Obstetrics, Gynecology and Abdominal Surgery at the Sixty-Fifth Annual Session of the American Medical Association, Atlantic City, N. J., June, 1914.

Bearing in mind the preceding precautions, and also the other points of technic advocated by the author of the test, I have within the past fifteen months carried out the test on ninety-five subjects, about seventy of whom were women known to be pregnant. Nearly all these tests were made by myself in the laboratories of the Marquette University School of Medicine. This is a very small number of tests when compared with the hundreds made at the New York Lying-in Hospital, and some of the continental clinics. My series, however, has at least the advantage of having been begun late enough to enable me to profit by the mistakes of the earlier experimenters, and to avoid all that groping in the dark which made utterly unreliable all the early statistics on the dialyzation test. Without giving a complete tabulation, my results may be briefly summarized so as to bring out the two conspicuous features as follows:

First: The pregnant women of the series practically all gave positive reactions. In fact, the last fifty pregnant women of the series all gave positive reactions except one patient who was about two weeks pregnant (as proved by an abortion about two months later).

Secondly: In this series about 12 per cent. of non-pregnant persons gave positive reactions. These included several patients just operated on for acute or chronic appendicitis, pus-tubes, fibroids, and ovarian cysts.

The positive reactions in non-pregnant patients were at first attributed to errors of technic. Possibly that is the true explanation. But with the most painstaking care I have not been able materially to reduce the percentage of non-pregnant patients giving positive reactions. According to the results obtained in this series, it would appear that the test is of value in a negative sense only. That is to say, if a woman does not give a positive reaction to the test, it is safe to conclude that she is not pregnant. On the other hand if she gives a positive reaction, we can only say that she is probably pregnant. This limitation largely neutralizes the value of the test as it is now carried out.

Some of the contributory causes which in my opinion have limited the popularity and usefulness of the serum test for pregnancy are the following:

1. Although the test appears on paper to be comparatively simple, its proper execution is exceedingly difficult and time-consuming.

2. The test is not well suited for the general clinical laboratory, but should be made only by one who is doing the test every day, and always has the materials fresh and in perfect condition.

3. The presence in the blood of filterable substances reacting to ninhydrin has been noted by many observers and writers as occurring during the height of digestion, or in certain conditions of altered metabolism. These substances have been referred to as sources of possible error in the dialysis test for pregnancy. This fallacy can largely be eliminated by using for the control the inactivated serum from the patient who is being tested.

4. The presence in normal blood of non-specific proteolytic enzymes possessing feeble powers of digesting proteids parenterally is, I believe, generally conceded. It seems reasonable that these normally present enzymes might, under certain conditions other than pregnancy, cause sufficient digestion of placental albumin to vitiate the test, or at least make the result doubtful.

5. To procure for the test a sufficient quantity of serum entirely devoid of any trace of hemolysis is sometimes a matter of extreme difficulty, especially in those cases in which the blood must be transported for any considerable distance to the laboratory.

6. The use of parchment tubes or thimbles as filters, constitutes one of the intrinsically weak spots in the dialysis test. No matter how well they are made or how positively the manufacturer may guarantee them, we know that the parchment tubes are an unstable and inconstant quantity, and may be a source of well-nigh unavoidable error. Even after the tubes have been thoroughly tested and the imperfect ones thrown out, we have found that their permeability to peptones and amino-acids becomes altered by boiling, which is the only method of sterilizing them perfectly. We hold that no method of carrying out a biologic test can be an ideal one so long as it depends for its results on the integrity and constancy of a frequently boiled parchment membrane. Errors from this source need not be numerous, but the fact that they will occur now and then stands as an indictment against the absolute accuracy of the dialysis method.

A year ago I made the prediction before this section that in the course of time the Abderhalden test for pregnancy would take its place with the Widal and Wassermann tests in point of reliability. Further personal experience with the test and an observation of the experiences of other workers have convinced me that that time has not yet arrived.

SUMMARY

The dialysis test for pregnancy in its present stage of development is of value chiefly in a negative sense only; that is, if a woman fails to give a positive reaction, she is not pregnant. If, on the other hand, she gives a positive reaction, we can only say she is probably pregnant; for with our present technic, from 10 to 15 per cent. of non-pregnant persons will give positive reactions.

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VALUE OF ABDERHALDEN'S BIOLOGIC REACTIONS TO THE OBSTETRICIAN AND GYNECOLOGIST *

HENRY SCHWARZ, M.D.
ST. LOUIS

At the present state of the investigation it is possible with the aid of Abderhalden's dialyzation reaction and with his optic method to demonstrate the strict specificity of the so-called protective ferments, demonstrating thereby at the same time that the protoplasms of the various organs and tissues of the animal organism differ sufficiently from each other in chemical structure to be recognizable with the aid of these ferments, even after they have been boiled or after they have been reduced to the peptone stage. It is possible to prepare placental albumin and placental peptone which will be readily cleft by pregnancy

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* Read before the Section on Obstetrics, Gynecology and Abdominal Surgery at the Sixty-Fifth Annual Session of the American Medical Association, Atlantic City, N. J., June, 1914.

serum, but which will not be cleft by other serums and certainly not by serum from a cancer patient; on the other hand, it is also possible to prepare coagulated cancer tissue which will be cleft by cancer serum and which will not react with the serum of pregnancy.

Thus, by making a number of cross-examinations, examining the same cancer serum and the same pregnancy serum against the same placental albumin and the same cancer albumin in the same experiment, and finding under these conditions that cancer serum reacts with cancer tissue only, and that pregnancy serum reacts with placental tissue only, one proves the specificity of the protective ferments and the specific structure of the various protoplasms. This demonstration is constantly made in Abderhalden's institution; it has been made in a few other laboratories; it has been made time and again in the laboratory of the Department of Obstetrics of Washington University; my associates and I have taken great pleasure in making these demonstrations before the numerous visitors, including experienced laboratory men, who have come to St. Louis for the express purpose of studying certain points of technic.

Obstetricians and gynecologists have a certain dvantage in this investigation, which should mean hat they also have a certain obligation to assist in demonstrating the truth of this new doctrine. In the women's clinic pregnancy cases and cancer cases are always to be found; the material for preparing albumin or peptone can be obtained fresh from the delivery room or from the operating pavilion; the special precautions in obtaining and handling serum can be readily observed; the women's clinic, therefore, must become the training camp for those laboratory men, who wish to engage in research work in this new field.

It is a waste of energy and material to attempt investigation of other conditions and to work with other organs and tissues before the investigator has learned the fundamentals of this work and has tested the efficiency of his technic on the touchstone of the cross-examination of pregnancy and cancer.

Be it remembered that in these two examinations the material for the preparation of albumin or peptone can be obtained in perfectly fresh condition; while, when working with other organs and tissues, we must obtain the material from the necropsy room or else we must substitute animal organs and tissues, which substitution is not as yet justified on the basis of convincing experiments. The fact that we can prove that the protective enzymes found in pregnancy and in cancer are specific, does not mean that we are willing to use these biologic reactions for diagnostic purposes without the greatest reserve.

The serodiagnosis of pregnancy, even in expert hands, is subject to error on account of unreliable dialyzing thimbles; danger from this source is reduced, but not eliminated, by multiplying tests and controls. The optic method eliminates this source of error. We find, however, that peptone obtainable in the market is not always reliable and have therefore started to prepare our own peptone. It is true that the manufacturing chemist can do this work better and cheaper than we can, but we can start with a blood-free placental preparation, which is so essential a point that we are unwilling to entrust this work to the manufacturer; we also need other peptones which are not offered on the market.

Besides this source of error contained in the dialyzation method, it must be remembered that, even when the test works out correctly, a positive reaction simply means that the case in question harbors placental elements; usually it means that the patient is pregnant. Placental elements, however, are often harbored in the uterus or even in other parts of the body for long periods after delivery; this is especially true in cases of hydatidiform mole, in which the retention of syncytial cells is so apt to lead to the development of chorio-epithelioma.

These tumors, being of placental origin, naturally give a positive reaction with pregnancy serum. We have a case under observation, at present, of a woman who passed a hydatidiform mole over three months ago, who menstruates regularly, who is not pregnant and whose serum continues to react positively with placental preparations. It is for these reasons that we are unwilling to consider a positive reaction of serum with placental preparations a convincing proof of pregnancy, except in connection with the clinical history of the case and in connection with a thorough physical examination. Even with these limitations the serodiagnosis of pregnancy has been of real service to us in arriving at a correct diagnosis in a number of perplexing cases.

In the serodiagnosis of cancer we have likewise found various difficulties. The serum in a suspected case may give a negative reaction although the case is one of cancer; this seems to happen when the cancer tissue used in the test is of different histologic structure from the cancer on which the test is made. We also find difficulty in securing cancer material which can be rendered blood-free and which is free from infection; at other times, it is not possible to isolate the cancer tissue from the tissue of the affected organ. So far it has not been possible to prepare the desirable quantity and varieties of malignant albumins; as regards the preparation of cancer-peptones, this has been simply out of the question.

In the course of time we hope to have on hand coagulated preparations made of the various forms of malignant tumors, but until we are thus provided, we must expect to get negative reactions in cases which differ in histologic structure from the cancer material used in the test.

Eventually, it will be possible to test the serum of suspected cases against mixtures of cancer albumin and cancer peptones and, in case of positive reaction, to ascertain the histologic structure of the tumor under investigation by a second series of tests against the component albumins or peptones of these polyvalent mixtures. The serodiagnosis of cancer will be of considerable value in those cases in which it is not possible to obtain material for microscopic examination before a serious operation is undertaken. The following is a case in point:

A woman, aged 68, suffered with pain and swelling in the region of the gall-bladder, and with jaundice; the diagnosis pointed to malignant disease, but a stone in the common duct could not be entirely excluded and an exploratory operation seemed indicated. The serodiagnosis made the diagnosis of malignancy positive, for the patient's serum reacted positively with cancer albumin and negatively with placental albumin; there was no need for removing the patient from a comfortable home and from her family; she died several months later of cancer of the liver.

Serodiagnosis of cancer is of still greater value for controlling cases after radical operations and for watching for a return of disease; also for observing the effect of Roentgen-ray treatment and other therapeutic measures on cancer cells.

The difficulty of securing reliable cancer preparations for this control work has induced us to use the material obtained at operations, regardless of its fitness for general investigations. The serum of the patient is obtained on the morning of the operation; the material obtained at the operation is prepared as well as conditions permit; a small portion of it is used immediately against the patient's serum and gives, as a matter of course, a positive reaction; the rest of this preparation is preserved for the patient's individual benefit and will answer for the control of her own case, although usually unfit to be used in tests on other patients.

This work was started only a few months ago; it is too early to estimate its actual value. This much is evident; the serodiagnosis of pregnancy and cancer by these biologic reactions is already of considerable practical value, but, at present, these methods are not suitable for the routine work of commercial laboratories; the attempt to employ them outside of research laboratories, closely connected with a hospital service, must lead to disappointment and tends to retard real progress in this field.

The demand for easier and quicker methods of serodiagnosis has induced Abderhalden to make the attempt to demonstrate the action of proteolytic ferments by the method used by Gruetzner in demonstrating the action of pepsin. Gruetzner uses fibrin stained with carmin; when some of the fibrin is digested, the carmin is set free, the solution of pepsin is thereby stained pink. My associate, Dr. Newell, has used carmin-stained placenta according to Abderhalden's directions, placing about 0.25 gm. of this tissue and 2 c.c. of serum in small test-tubes; after approximately eight hours, the tests containing pregnancy serum turned pink, while the control serum was still yellow, later, as all serums turned more or less pink, it seems worth while to continue these attempts. Abderhalden is also experimenting with other stains, and he advises against the use of this method at present, except in the way of experiment.

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ABSTRACT OF DISCUSSION

ON PAPERS OF DRS. VAUGHAN, ECHOLS AND SCHWARZ

Dr. Herman J. Holdt, New York: I am in accord with what Dr. Echols has said concerning his clinical experience and the conclusions at which he has arrived from his studies. I am not in accord, however, with those who wish to entirely obliterate serodiagnosis, the test of Abderhalden for the purpose of making a diagnosis of pregnancy. That is an unjustifiable position to take, both scientifically and with regard to the work done by those who have paid attention to it. Would any one dare to make a diagnosis of any illness by a single symptom, be that objective or subjective? I believe not. I believe that we should therefore class the dialysis method as only an objective symptom in the chain of symptoms for the purpose of establishing a probable diagnosis, and as such I regard it. Three or four months ago I saw in consultation a woman who was supposed to have an intra-uterine pregnancy. When questioned she gave subjectively a typical history of an ectopic gestation, and objectively this was confirmed. We must remember that between uterine abortion and an ectopic gestation or tubal abortion, it is at times difficult to draw a dividing-line in diagnosis. Subjectively the patient showed the condition of an ectopic gestation. I thought there was a hematocele posterior to the uterus. Since she had no symptoms leading me to believe that she must be immediately operated on I thought it best to keep her under observation. Her condition did not change. For two weeks she was kept at the hospital, when I suggested operating. We found a soft incarcerated subperitoneal myoma, that she had been pregnant and had aborted. The Abderhalden reaction in that instance proved negative. I thought that here was an instance in which we could make the diagnosis by the dialysis method and that it had failed. It did not fail, because we did have a negative reaction. We know that the Abderhalden test is always negative a few weeks after expulsion of the fetus. Another case was that of a woman brought by a physician to have her uterus removed. The examination showed the presence of a myoma. She had been seen by a number of colleagues. All advised operation without further delay. The menstrual period had been last seen six weeks previously and she had some gastric disturbance; there was a slight lividity about the mucosa of the vagina. I concluded that there was probably a myoma present in connection with early pregnancy. The Abderhalden test gave a positive reaction. The woman was extremely anxious to have offspring. They had been married fifteen years. In connection with the subjective symptoms I believe I had a right to advise her to await conditions. Under these circumstances we have no right to discredit such a scientific sign of diagnosis if we regard it as only one of the conditions in connection with the case.

Dr. Charles S. Bacon, Chicago: The interest in this subject is not only that due to the question of diagnosis, but to the broader question of ferment digestion. Experiments in the University of Illinois comprise work done by the research fellow in this department. Our results conform almost exactly to those obtained by Dr. Echols, and we cannot agree with Dr. Schwarz in finding a specific ferment in these cases. In the number of observations made care is taken to follow Abderhalden's method exactly. The care that we have taken in the control and the amount of material we have used in making observations on other classes of cases make our conclusion worthy of consideration.

Dr. Philip F. Williams, Philadelphia: We have been working with the Abderhalden test for pregnancy at the University of Pennsylvania for the past two years. In our earlier work we confined our efforts to the dialysis method in pregnancy. Every pregnancy serum examined gave a positive reaction, but a number of serums from non-pregnant patients also responded positively. When we used uterine carcinoma tissue as substrate we found a digestion of this tissue as well as of placenta by the pregnancy serums. As the dialysis shells were found to be unfit for use after the preliminary tests in more than 50 per cent. we devised a method of coagulation and filtration. By this we also had an occasional positive reaction in a non-pregnant serum. Our animal experiments consisted in the injection of kidney tissue into dogs and rabbits. After a single injection, ferments were developed which digested liver tissue as well as kidney tissue; after multiple injections there seemed to be a tendency for a more definite digestion of kidney tissue. The commercial placental peptone was used with pregnancy serums in the polariscopic method. Our poor results may have been due to the peptone, for in but few cases did we obtain a change of more than 0.04 degree. We have tried to measure the amount of amino-acid in a mixture of pregnancy serums and various placental preparations, before and after incubation, using the Van Slyke deaminization apparatus, but have not obtained any definite data at present. In reviewing our work of the past two years we cannot feel that the pregnancy ferments are of a specific nature.

Dr. F. H. Falls, Chicago: In our work with the Abderhalden test in the University of Illinois we followed the technic absolutely as given by him. We found that fully 12 per cent. of normal persons gave a positive reaction, following exactly the same technic used in examining the pregnant patients. That led us to examine the serum of various pathologic conditions and in these also we found many positive reactions. It seemed important to find what pathologic condition would give positive Abderhalden tests. We investigated cases of pneumonia, nephritis, splenomyelogenous leukemia, acute articular rheumatism and other conditions. Many gave positive Abderhalden reactions when exactly the same technic was used as in the pregnancy test with the placenta as a substrate. This will to a certain extent vitiate the reliability of the Abderhalden test. I think the technic is not too difficult for a person to develop and use who has had experience in the serologic work. I might say that, so far as the cancer problem is concerned, it has been my experience that serum from cancer patients will digest placenta as a substrate. This is not true in every case, however, and there seems to be no definite relation between the extent of the cancer and the digestion that the serum will give. Concerning the boiling of the dialysis thimbles as given by Dr. Echols, we found that boiling No. 579 Schlicter thimbles for two minutes did not cause permeability of the thimbles within a reasonable length of time. I used the thimbles for a month or so and tested them repeatedly, and in no case was there the slightest trace of color. After using a set of thimbles for three months they were discarded, not because they let through albumin, but because their equivalent permeability to peptone had been altered. I think it important to run the inactivated serum control. Only so can we judge the reaction. If, as Dr. Echols said, the inactivated serum-control was negative in cases taken at the height of digestion, then it cannot be the amino-acids present in the blood, but ferment activity in the active serum that accounts for positive reactions under these conditions.

Dr. Charles Goodman, New York: During the latter part of last year it was my privilege to learn in Abderhalden's laboratory the technic of the dialysis test described by him. It was my intention to employ the test in seeking a method of overcoming autolysis in homotransplantation of organs. In a series of transplantations in fourteen dogs we were able to demonstrate the presence of a ferment capable of digesting suprarenal tissue in the presence of a transplant of the thyroid gland. In a series of cases of pregnancy, my assistant, Dr. Berkowitz, and I were able to demonstrate the presence of a specific ferment with a uniform degree of success by the Abderhalden dialysis test. In a series of cases of malignancy we have been able to demonstrate the presence of a specific ferment capable of digesting carcinoma or sarcoma in thirty-one out of thirty-two instances. We always used serum thimbles as a control. A negative result is of more value than a positive reaction. The test is exceedingly delicate, and false and divergent results may be obtained owing to slight errors in technic. The technic is complicated and difficult but not beyond the realm of possibility of being mastered by serious and diligent application. The fundamental rules of the test must be obeyed. We must not condemn the method because it requires careful working. Professor Abderhalden advised me and the other workers, after having made use of the thimble, to cleanse it in running water for thirty minutes and then drop it into boiling water for fifteen seconds and no longer, because if it boils it becomes thick. After the thimbles have been in boiling water for fifteen seconds they are put into a container of sterilized distilled water and toluene and kept for use.

Dr. Michael G. Wohl, Philadelphia: We forget that Abderhalden's reaction has its restrictions and we demand too much from it. The apparent simplicity of the test is responsible for the great inaccuracy of the results obtained through not paying strict enough attention to its technic. Among the errors pointed out I wish to emphasize the importance of boiling the dialysate. The reaction is more quantitative than qualitative. A definite amount of protein cleavage products present in the diffusate combine with a definite amount of ninhydrin giving the violet color. Now, if there is less of the protein cleavage products or less ninhydrin, you will either get a faint reaction or none. The unequal boiling, therefore, whereby you obtain in one instance a greater concentration of the diffusate, and in another a lesser, will be responsible for the divergent results. We count one minute from the time bubbles appear in the test-tube. The amount of water added to the beaker outside of the thimbles must always be uniform (20 c.c.). As Dr. Echols said, it is not necessary to pay much attention to the quantity of water added to the outside of the thimbles. I believe that this may account for the discouraging results. I hope that soon we may have a uniform color-scale by which each worker may determine the end-results of the reaction. On the specificity of the ferments the future of the reaction depends. From our work with this reaction in nervous diseases in the neuropathologic laboratory of Dr. Weisenburg and in the Samaritan Hospital, I believe that the reaction is organ specific.

In our cases we find that serums of male patients with dementia praecox digest testicular tissue, and serums of female digest ovarian tissue. Is this not sufficient evidence of the specificity of the ferments? True, we may, under certain conditions, get cleavage of placental tissue or of any tissue with serums of non-pregnant patients, when there is a leukocytosis. As is well known, leukocytes contain nonspecific proteolytic ferments and, consequently, serums from patients with an inflammatory condition might give a positive reaction when a negative reading was expected. We make a differential blood-count in all such cases. Another possibility of error lies in some hemorrhage, bruise or hematoma whereby through the hemolysis of the red cells a ferment is liberated which might possibly cause cleavage of protein substances. Do not condemn the reaction in an off-hand manner if it has not met your expectations. Realize the qualitative nature of the test. Search for the cause of your wrong reading. Because you get the positive Wassermann in yaws or psoriasis you do not necessarily discard the reaction but govern yourself in accordance with the clinical picture. Why not apply the same rule to the Abderhalden?

Dr. Clarence F. Ball, Rutland, Vt.: I contradict the statement that cancerous and pregnant conditions will interact generally. I have a series of nearly 100 cases in only a very few of which has pregnancy given a cancer reaction or cancer a pregnancy reaction. Some of the cases have come to operation and I have not been able to demonstrate third-degree proliferation of the epithelium; there was a second-degree proliferation, however. My work in all of these cases has been done running four thimbles: one with activated serum, one with the serum and cancer tissue, another with either serum alone or the tissue—whichever I suspected, and the fourth with placental tissue. I use the cancer tissue for the primary test; placental for the secondary fundamental. The question of the validity depends on more than 90 or 900 cases; it depends on work which must be as extensive as that on the Wassermann has been. It may share the same fate as the Wassermann, or even worse. I believe, however, that there is a better future for the test. I have followed Dr. Schwarz' modification of the Abderhalden test, although I have not been to Dr. Schwarz' clinic. As to the question of cancer fundaments, obtain all your cancer tissue with as many cells as you can obtain free from the tissue invaded. The tissue that I have had the best results with has been that from a metastasis in which practically all of the tissue was cancer cells.

Dr. O. Lowy, Newark, N. J.: I have done considerable work in dialysis and have found that, as Dr. Wohl has brought out, the question of boiling is very important. To do away with some of the uncertainty I boil my solutions in a water-bath and instead of boiling for one minute I boil them for ten, using the four-thimble method and the activated serum. At the end of ten minutes I read the result. In using the flame a different heat is obtained according to the position in which the test-tube containing the serum is held, whether toward the center or end of flame. Another method to which I resorted to overcome error is: in a positive result I retest that same thimble at once against albumin. If the albumin gives a positive result my test is of no value. If it is negative I test against peptone. If that is positive I know that my test is right. As far as the value of the test is concerned, only the cumulative evidence of thousands of cases will do that. Up to the present we have tested 150 to 180 cases of cancer. In a number of cases of diabetes I have obtained a positive result; why, I do not know.

Dr. A. J. Carlson, Chicago: There is a fundamental discrepancy between one of Professor Abderhalden's statements and one of the main points in Dr. Vaughan's paper. Abderhalden takes the position that normal blood contains no polyvalent proteolytic enzymes, while Dr. Vaughan maintains that "the blood is a digestive fluid." Just there lies the main source of error in the practical utility of the Abderhalden test. I have had no personal experience with this test, but I have done some work on the ferments of the blood. I cannot accept Abderhalden's dictum as to the absence of polyvalent ferments in normal blood. I predict that normal blood will be found to contain polyvalent ferment or ferments, that when specific proteins are liberated into the blood, specific ferments are produced. That means that the Abderhalden test must be, not a qualitative, but a quantitative one. Of course I admit that the question whether or not normal blood-serum contains polyvalent ferments is a difficult one to decide. We have no means of obtaining serum identical with the plasma of the circulating blood. Dr. Vaughan emphasizes particularly that the leukocytes and the blood platelets are the source of some of these ferments. That may be partly true, but I wonder whether he is not unduly influenced by the distinguished gentleman across the water—Metchnikoff. In regard to many of the immune bodies I am confident on the basis of work by Dr. Hektoen and myself that tissues other than the leukocytes are the most important.

Dr. Henry Schwarz, St. Louis: I wish to say, since a great many men are influenced by the technic which I had given out, that there is one point about boiling the thimbles which was incorrectly stated in my paper read at Providence, R. I. I there stated that I boiled the thimbles five or six minutes. I do not. Such boiling spoils the thimbles, rendering them impermeable. We simply dip them in boiling water for not more than fifteen seconds, as Abderhalden suggests. A great many men with just as much training as Dr. Falls undoubtedly has, and with similar experience, have found when they published their results and their methods, that some little point of technic was wrong, which upset the whole matter. We are all willing to admit that the thing is not quite ready for everybody to work with; we are not quite ready to advise serodiagnosis of pregnancy or cancer, on a commercial basis at any price. We would not take any money for it, but we are all working in the same field and we are trying to make good. There are others who are not obtaining convincing results. Come to St. Louis, we shall be glad to show you in our laboratories the work that we are doing.

THE USE OF SALVARSAN IN NON-SYPHILITIC DISEASES*

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Although the use of salvarsan, first introduced as a *therapia sterilisans magna* in syphilis, has been somewhat of a disappointment as such, its influence on certain non-syphilitic diseases has been so pronounced that it is being used in an ever-increasing number of diseases, with the idea of enlarging its sphere of usefulness. So far as I know, however, no attempt has been made to use this drug on the basis of the relationship of the physiologic action of salvarsan to the etiology, pathology and manifestations of the disease treated. One can hardly call the treatment empiric. It has been used with the idea of what result *will* be obtained, rather than what result *should* be obtained.

In the fall of 1910, shortly after the introduction of salvarsan in the Kings County Hospital we noticed the coincident improvement of the tuberculosis in several cases of syphilis complicated by this disease. This rather unthought-of and unlooked-for result first stimulated our attention to the possibilities of salvarsan in non-syphilitic diseases.

For the past three years we have been conducting, on the service of Dr. J. M. Winfield at Kings County Hospital, a series of investigations with a view of establishing the underlying factors that govern the success or failure of salvarsan in the treatment of non-specific conditions. That some diseases respond as readily to salvarsan as does syphilis, that others are improved, that some act indifferently toward it, and still others are absolutely uninfluenced by it, can be readily seen by a quick survey of the literature; but it requires a close study of the relationship of the physiologic action of salvarsan to the etiology, pathology and manifestations of these diseases, before we can hope to explain these phenomena on a scientific basis.

The diseases treated by us include cases of anemia, chancroid, chyluria, elephantiasis, epithelioma, erythema multiforme, leprosy, lupus vulgaris, pityriasis rubra, psoriasis, tuberculosis and trichinosis. Realizing the limited scope of our cases, I have supplemented them with a review of the literature. The cases treated by us have been grouped with those taken from the literature for the purpose of obtaining a composite picture of what may be expected from salvarsan therapy in each individual disease.

EFFECTS OF SALVARSAN IN VARIOUS DISEASES

Acanthosis Nigricans.—One case was treated with three injections of salvarsan. The general condition improved and the skin lesions disappeared. This patient had a scar which resembled a healed chancre.

Aleppo Boil (Oriental Sore).—Of twelve patients treated, four were cured, one improved, five were uninfluenced, and in two the results were very doubtful. Most of the patients received two intravenous injections at ten-day intervals.

Petersen[1] declares, from his observation, that salvarsan is almost specific in this condition. Lubenau,[2] in 1912, asserted that salvarsan shows almost specific results in kala-azar.

It has been asserted that Aleppo boil and kala-azar are kindred affections. Sir P. Manson has advanced the theory that Aleppo boil bears the same relation to kala-azar as vaccinia does to variola. That is, the protozoan of Aleppo boil is in reality an attenuated Leishman-Donovan body, producing on the one hand merely the local lesions of Aleppo boil, while in its more virulent form producing the severer constitutional disease kala-azar. The camel he believes to be the attenuator of this parasite, as is the cow in the case of the germ of variola.

Petersen and Lubenau, however, stand alone in their declaration of the specificity of salvarsan in Aleppo boil and kala-azar. Their statements are not borne out by the results obtained by other investigators.

Amebic Dysentery.—Three cases of several years' standing were treated with intravenous injections of salvarsan. After the first injection the amebas, blood and mucous disappeared from the stools. Within a few days the stools lessened and became formed. One patient received a second injection and all three remained well.

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* Read before the Section on Dermatology at the Sixty-Fifth Annual Session of the American Medical Association, Atlantic City, N. J., June, 1914.

[1] Petersen: Russk. Wratschr., 1912, No. 43.

[2] Lubenau: Diss., Strassburg, 1912.

Anthrax.—Three patients are reported as having received several injections each. Improvement was noted after the first injection, the cases going on to recovery.

Experiments on dogs by Shuster[3] showed a killing of bacilli with salvarsan. Another investigator[4] reports curing dogs of anthrax, giving them 0.04 gm. per kilogram of weight. He feels assured that 0.6 gm. will effect a cure in man.

Anemia.—Here are considered only cases of the primary progressive type. Of thirteen cases, each receiving one or more intravenous injections, six showed remission (increase in red cells approximating normal, and improvement of general condition), two a marked benefit, two improved at first but relapsed, and two showed no benefit. The remaining case was too recent to venture an opinion.

Bilharziasis.—Out of five cases, the results in four were absolutely negative. In the fifth, there was a disappearance of ova and miracidia from the urine, but Fulleborn and Werner,[5] who report the case, argue that this does not necessarily mean a cure. According to them the best that can be said for salvarsan in bilharziasis is that it has an influence on the vitality of the miracidia.

Carcinoma.—Seven cases were treated with intratumoral injections of salvarsan in neutral suspension. Some of the patients declared that there was a lessening of pain, and in a few instances the mass seemed to become temporarily smaller; otherwise there were no favorable results noted.

Several cases of epithelioma were treated with local applications, but no improvement followed.

Chancroid.—One case in which the Ducrey bacillus was demonstrated received intravenous injections of salvarsan, and in thirteen days, it is asserted, the chancroid condition had healed. No local treatment was used.

This is not in accord with our results at Kings County Hospital, where a number of chancroidal conditions were treated locally with salvarsan in oily suspension, as a 10 per cent. ointment, and as a dusting-powder. We have never seen any influence on the chancroids that could be attributed to this local treatment. In a case of syphilis in which chancroids existed coincidently, an intravenous injection did not heal the local condition.

Sydenham's Chorea.—Some of the cases were of two years' duration. Thirty-five cases received from two to four doses of from 0.2 to 0.6 gm. each, some given intramuscularly and some intravenously. Without any exception these patients recovered in from two to four weeks.

Dermatitis Herpetiformis (Duhring's Disease).—Five patients have been treated with from one to three intravenous injections. Three responded quickly and completely, one responded more slowly, and the remaining case received quinin as an adjuvant with gratifying results.

Erythema Multiforme.—One case has been reported in which salvarsan had no apparent effect on the course of the disease. In another case (bullous type) of our own at Kings County Hospital, the patient received no benefit from an intravenous injection, and died within a couple of weeks after admission. This was the second attack within a year, the patient recovering from the first attack under ordinary treatment in about five weeks.

Some authorities have tried to create a relationship between dermatitis herpetiformis, erythema multiforme and urticaria, since the eruptions of all three are at times seen either at the same time or at different times in the same person. Judging from the response of dermatitis herpetiformis and erythema multiforme to salvarsan, it does not seem as if there is much in common underlying the diseases.

Filariasis.—Under this head are grouped the diseases caused by the *Filaria sanguinis hominis.* They are designated elephantiasis and elephantoid diseases. Of the latter, chyluria is the only one in which salvarsan therapy has been used.

Two cases of elephantiasis are reported as showing negative results after the intravenous injection of salvarsan. In one case treated by us the filaria could not be found in the blood after one injection of salvarsan, but of course the enlargement and induration of the lower extremities, which was the part affected, were not lessened. If it is necessary to reduce the affected parts to their normal appearance before we can pronounce a cure, elephantiasis must of necessity be incurable, since these changes are permanent. If, however, the disappearance of filaria from the blood can be taken as an index of the cure, the apparent disparity in the results may be accounted for by a difference of opinion as to what constitutes a cure.

Two cases of chyluria have been treated with one intravenous injection of salvarsan each. In one case the urine started to clear within seventy-two hours, but in the other case the urine persisted cloudy for some time. In both cases, however, repeated examination of the blood for two weeks disclosed no filaria.

Frambesia (Yaws).—Two thousand four hundred and thirty cases have been reported. The intramuscular and intravenous methods yielded equally good results. With a few exceptions a cure was effected in from two to three weeks. The few exceptions were improved and later cured by a subsequent injection. In only a few instances were three injections necessary. Even after boiling, the serum from patients who have recovered is reported to be as efficacious as salvarsan itself. Hospitals for the treatment of frambesia, with a daily census of several hundred patients, have been closed since the use of salvarsan.

Hodgkin's Disease.—Three cases were treated with injection of salvarsan into the accessible enlarged lymph-nodes. It made no impression, however, and the disease ran its usual course.

Keratosis Follicularis (Darier's Disease).—Temporary improvement was noted in one case, but a cure was not effected.

Leprosy.—Thirty patients have been treated, mostly with intramuscular and subcutaneous injections. Sixteen of the cases were uninfluenced. The remaining fourteen showed various degrees of improvement. Different observers report a lessening of the nasal secretions, disappearance of bacilli from the nasal secretions, retrogression and in some instances disappearance of nodules, and improvement in the abnormal sensations. They all agree, however, that these improved cases, even the most pronounced, were only temporary. Later new nodules formed and the disease progressed its usual course.

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[3] Shuster: München. med. Wchnschr., 1912, No. 7.

[4] Therap. Monatshr., December, 1912.

[5] Fulleborn and Werner: Deutsch. med. Wchnschr., 1912, No. 8.

Lichen Planus (Lichen Ruber Planus, Lichen Hypertrophicus).—Seven cases, in each of which two injections of salvarsan were given, have been reported. In one case, about an hour after the first intravenous injection, there was a reaction consisting of redness, burning, and swelling of the lesions, which soon subsided. Twenty days after the second injection the eruption improved, and although the observer could not report a complete cure, he felt certain that salvarsan was more effective than any other treatment he had used. Another case, after two intravenous injections at ten-day intervals underwent retrogressive changes which led to a complete cure. Two cases in which intramuscular injections were given showed slow disappearance of the lesions. The remaining three cases were not influenced by the treatment.

Lupus Vulgaris.—Of eighteen patients, twelve were treated with salvarsan alone, and six received tuberculin in conjunction with the salvarsan. Repeated injections were given at four-week intervals in most of the cases. It is noteworthy that after the first injection some of the cases showed local reactions much like tuberculin skin-reactions. Of the twelve patients treated with salvarsan alone, three, after several injections, showed improvement, and the remainder were uninfluenced. Of the six patients treated by the combined method, all were cured in a comparatively short time.

Mycosis Fungoides.—At the meeting of the New York Dermatological Society, December, 1912, Dr. Jerome Kingsbury presented a patient whom he had treated with repeated injections of salvarsan, with marked improvement.

Malaria.—Fourteen patients with either tertian or quartan type were treated with intravenous injections of salvarsan. In no cases were the plasmodia demonstrable after the injections, and the clinical symptoms disappeared.

Pemphigus.—Under this head are considered three allied skin-eruptions, pemphigus chronicus or vulgaris, pemphigus vegetans, and pemphigus foliaceus. These three affections are considered by some as distinct entities, but there is much in favor of their being merely different manifestations of the same disease.

One case of pemphigus vegetans responded well to salvarsan, while in a case of pemphigus foliaceus it was ineffectual. Neither did quinin in ascending doses produce any effect on this case. In another case of pemphigus foliaceus a better condition of the skin, less pruritus, less exudation, and more abundant exfoliation were noted. The patient died, however, having received only three small intravenous injections. Thirteen patients with pemphigus vulgaris were treated with one or more injections. Six of these have been reported cured (two requiring a second injection), and seven were treated without any benefit.

If we take into consideration that these cases are reported from different sections of the world, and remember the unsettled ideas prevalent concerning the bullous eruptions, and the fact that these patients sometimes recover spontaneously, we may find therein the reason for such diverse results.

Pellagra.—Seventy-four cases have been reported, most of the patients being treated with repeated injections, intravenously. Two of these cases had positive Wassermanns, so we shall exclude them from the discussion. Twenty-three cases showed no definite improvement. Forty-nine cases, four of which had mental symptoms, showed different degrees of improvement, the majority going on to recovery. It might be stated that twenty-one of the cases in which no results were obtained are all reported by the same observers,[6] while the cases in which there was improvement and recovery are reported by seven other observers from different parts of this country.

Pityriasis Rubra (Dermatitis Exfoliativa).—One case showed progressive improvement after the fourth day. Ultimate results were not reported.

At Kings County Hospital a case of exfoliative dermatitis which later assumed the Wilson type, and which had resisted treatment for several years, was treated with weekly intramuscular injections of 0.1 gm. salvarsan suspended in oil. The treatment was continued for ten weeks, at the end of which time, though some redness persisted, exfoliation ceased, and the skin approached normal. The patient left the hospital but returned six weeks later with the condition as bad as it had been. Salvarsan therapy was again instituted with the same gratifying results. The patient at present has an almost normal skin with only an occasional circumscribed area of redness and scaling developing. It is interesting to note that this patient, although only about 35 years of age, has an advanced arthritis deformans, the onset of which preceded the skin condition.

Psoriasis.—Ten cases reported were subjected to salvarsan treatment. In three patients, each receiving two injections, the eruption disappeared in from three to four weeks. In four cases the scaling increased and the eruption seemed to involute for a few days, but after that remained stationary. Three cases were absolutely uninfluenced.

We have treated ten cases of psoriasis with intramuscular and intravenous injections of salvarsan and with one exception have seen no encouraging results. The one exception had a most typical psoriatic eruption which responded beautifully to an intravenous injection, but to our dismay the laboratory report showed a positive Wassermann. On close questioning a vague history of syphilis was elicited. The three cases reported as cured may have been similar to this one.

Relapsing Fever.—One hundred and ninety-five cases received 0.2 and 0.3 gm. of salvarsan intravenously during the febrile stage. In the majority of the cases the organisms could not be demonstrated in the blood from four to ten hours after the injection, and the fever disappeared in from seven to fourteen hours. In none of the cases were relapses observed.

Rhinoscleroma (Scleroma).—Four cases have been reported in which the clinical picture remained unchanged after the patients had received a subcutaneous and an intramuscular injection.

Scurvy (Scorbutus).—Of ten patients treated, eight received repeated doses of 0.2 or 0.3 gm. of salvarsan until 1 gm. had been given. There was a rapid decline of symptoms and quick general improvement. In the other two cases the amount of salvarsan given is not recorded, but the results obtained were excellent.

Sarcoma.—Four patients received intratumoral injections. One patient received three injections and showed temporary improvement. In the other three cases there was no appreciable influence on the disease.

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[6] Cole, H. P., and Winthrop, G. J.: The Status of Salvarsan in Pellagra, Based on the Reports of Twenty-One Collected Cases, The Journal A. M. A., June 17, 1911, p. 1794.

Sticker, at a meeting of the Berlin Dermatological Society in February, 1911, exhibited a dog in which he had grafted sarcoma, which he subsequently destroyed with salvarsan.

Scarlet Fever.—Five cases, in some of which the prognosis was fatal, received injections, but without any effect. It would seem to me that salvarsan is a dangerous drug to use in scarlet fever. On account of the frequent kidney involvement, a dose of salvarsan might just be the factor in defunctionating the already damaged kidneys.

Tuberculosis.—Abulow[7] reported improvement following the administration of salvarsan in tuberculous patients; but the improvement was only temporary, no arrest of the disease being noted.

It was a similar initial improvement that first stimulated our attention to the possibilities of salvarsan in diseases other than syphilis. We have since made the same observations in other cases of tuberculosis, the results of our observations concurring precisely with Abulow's.

Tuberculides.—(These cases comprise three of papulonecrotic tuberculides, two of angiolupoid, two of lupus erythematosis, three of erythema induratum and three of lichen scrofulosorum).—The results obtained in these cases were various. Some showed quick and decided benefit, others showed improvement which may or may not be attributable to the salvarsan, and in some there was no response. The papulonecrotic tuberculides, angiolupoid and erythema induratum were the conditions that showed the most improvement.

Trichinosis.—At Kings County Hospital there were two cases simultaneously (husband and wife). Both received the usual purgative and supportive treatment. One received in addition 0.6 gm. of salvarsan. The course of the disease was not altered and both patients succumbed. At post-mortem the live trichinellae were demonstrable in the muscle-tissue.

Trypanosomiasis.—Of fifteen cases reported, eleven patients died (one immediately following the injection). One patient survived but was hemiplegic. One patient recovered and has had no symptoms for two years. Two patients received intraspinal injections of 10 c.c. of 1:100 solution of neosalvarsan, one of whom died after the first injection, and the other finally succumbed after the third.

Ulcus Tropicum (Ulcus Phagedaenicum).—Six patients have been treated with extremely favorable results. Three received intravenous injections, two intramuscular, and in one a 10 per cent. ointment was used. The intramuscular cases had been treated by various other methods for six months with no response, and in from seventeen to twenty-five days, respectively, the ulcers were healed. Two days after the intravenous injection improvement started and went on rapidly to a complete healing. The ointment healed the ulcers in ten days.

Verrucae Planae.—Four patients each received an intravenous injection of salvarsan. In one case the warts disappeared after a few days. In another case the lesions on the face disappeared by the sixth day, and on the hands by the nineteenth day. In the third case the lesions disappeared within a couple of weeks. In the fourth case the lesions disappeared, but there were recurrences.

Variola Vera.—Three severe cases of small-pox were treated with two intravenous injections of 0.1 gm. of salvarsan. The patients improved generally and recovered without any complications.

Vincent's Angina.—Of eleven cases, seven were treated with local applications (two as a dusting-powder, and five suspended in glycerin), and four received intravenous injections. Both methods gave equally good results. In each case there was an immediate improvement and a rapid healing.

Besides these eleven cases Assmay and Kyritz[8] report salvarsan very effective in ulcerations that are due to the symbiotic action of Vincent's organisms.

SUMMARY OF RESULTS

Viewing the situation from the results obtained, the diseases treated fall into one of three groups: first, those which were uninfluenced; second, those in which the results were indifferent, that is, showing different degrees of improvement in different cases of the same disease, or showing improvement or cure in some cases, with negative results in other cases of the same disease, and third, those in which a uniform improvement or cure was effected.

Group A. This group comprises bilharziasis, carcinoma, chancroid, erythema multiforme, Hodgkin's disease, psoriasis, rhinoscleroma, scarlet fever, sarcoma, trichinosis, trypanosomiasis.

There is nothing in the etiology, pathology or clinical manifestations of these diseases that would lead one to suppose that any response to salvarsan should be obtained. In those which are of bacterial or protozoan origin, the organisms by virtue of their protected location in the tissues are practically impregnable. With the exception of psoriasis, arsenic has never had a place in the treatment of any of them. In psoriasis, Fowler's solution in ascending doses has been used extensively, but with variable results; and apparently salvarsan, because of its more transient presence in the system, has not even the virtue of the other arsenical preparations in this very chronic condition. The mode of administration ought to be a factor in this and other chronic diseases. If small, often repeated, intramuscular injections be given over a long period, instead of one or two intramuscular or intravenous injections of 0.6 gm. at a monthly interval, more satisfactory results might be obtained. In Hodgkin's disease, it is a question how much absorption was obtained by the intratumoral injections; and since there is no parasite to be destroyed, it is difficult to say what benefit could be expected from this form of treatment. By small, intramuscular injections, judiciously repeated, one would be obtaining a more prolonged effect of the arsenic, thereby combating the anemia and probably giving the patient a longer lease of life.

Group B. This group may be divided into two subgroups, (1) those of supposedly non-parasitic, and (2) those of known parasitic origin.

1. Anemia, keratosis follicularis, lichen planus, mycosis fungoides pemphigus, pellagra, pityriasis rubra, and the tuberculides. Here are a group of diseases in which arsenic has always been recommended and extensively used but with no constant results; and we find that salvarsan affects them with the same irregularity. They are essentially diseases in which a

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[7] Abulow: Russian Jour. Skin and Venereal Dis., July, 1912.

[8] Assmay and Kyritz: Arch. f. Schiffs- u. Tropen-Hyg., 1913, No. 17.

depleted nervous system plays an important part either primarily or secondarily, and the good results that were obtained are due to the tonic, stimulating and alterative properties of the arsenic radical. In those cases which were influenced, the salvarsan seemed to act with more rapidity and decisiveness than other arsenic preparations.

2. Aleppo boil, leprosy, lupus vulgaris and tuberculosis. In these diseases salvarsan may have a certain germicidal effect on the invading organisms, but cannot reach them all on account of their more or less protected position in the tissues. It destroys such of them as it can reach and the disease is apparently improved or arrested, only to go on its regular course after the drug has been eliminated from the system. Here too must be admitted a certain tonic, stimulating and alterative effect from the arsenic. One cannot ignore the marked improvement, although only temporary, in leprosy. Salvarsan here is a valuable adjunct in its treatment. It should be used at intervals intravenously or intramuscularly, dependence being placed on chaulmoogra oil, nux vomica and tuberculin for the ultimate results. In fact, such a method has been carried out by us in one case with excellent results.

This patient, a Japanese and native of Singapore, was admitted to the hospital with his face covered with nodules varying in size from that of a lentil to that of a walnut. He was given chaulmoogra oil and nux vomica in rapidly increasing doses. The nodules resolved and the patient made steady improvement under this treatment. He left the hospital and after six months' absence returned with active signs of recurrence. Although the same treatment was instituted and the chaulmoogra oil increased up to 150 drops, no impression was made on the disease. He was then given 0.6 gm. of salvarsan by vein. The leprotic nodules became inflamed and he was very ill for a few days. Ten days later serial injections of old tuberculin were started, the patient receiving weekly injections. Three weeks later improvement was noted, which continued until at the end of six months all clinical symptoms had disappeared. Patient was seen April 16, 1914, ten months after dismissal from the hospital, and there was apparently no recurrence.

Undoubtedly the good results obtained in lupus vulgaris must be attributed to the tuberculin. Salvarsan here seems to be a valuable adjuvant, since cases treated by us with tuberculin alone have not responded so quickly or so completely as those receiving the combined method.

Group C. This group divides itself into two subgroups, according to a known or unknown etiologic factor.

1. Filariasis, frambesia, relapsing fever and Vincent's angina. In these diseases the causative factor in each is a spirillum, and it is here that the results obtained have been no less brilliant than those obtained in syphilis. In amebic dysentery, anthrax and malaria, the invading organisms are easy of access. Anthrax, if not primarily so, soon becomes a general infection, the bacillus invading the lymph and blood. Malaria is a blood infection, the parasites at one time in their life cycle occupying the red cells and at another time floating free in the blood. An intravenous injection of salvarsan would destroy these organisms "at one fell swoop," as it were. The amebas of dysentery are undoubtedly destroyed by the excretion of arsenic through the bowel, as well as by the germicidal action of the drug in the blood in the intestinal mucosa. The local stimulating effect causes a healing of the ulcers.

2. Acanthosis nigricans, chorea, Duhring's disease, scurvy, ulcus tropicum, variola and verrucae planae. This is a miscellaneous group in which the etiologic factors are obscure or unknown, and it is difficult to be exactly certain of the factors operative in bringing about the happy results obtained. As was before suggested, there was a suspicious scar present in the case of acanthosis nigricans. Darier thinks that the disease is due to the action of a malignant growth on the abdominal sympathetic. Assuming that a visceral gummatous infiltration might produce the same effect on the abdominal sympathetic as a malignant growth, the good result obtained in this case is readily understood, whereas the same disease caused by a malignant condition might not be influenced in the least. Since all other treatment has been unsatisfactory, salvarsan should be tried in every case and its status more definitely established. In chorea arsenic has been the sine qua non, and in salvarsan we have replaced the former preparations by one of far greater potency and celerity of action. The results obtained in Duhring's disease have not been equaled by any other form of treatment. The exhausted nervous system seen in most cases of this disease is undoubtedly the basis on which salvarsan produced its good results. The alterative properties of salvarsan in the cases of scurvy corrected the disturbed metabolism promptly. If, then, a proper diet is prescribed, there should be no recurrence of this condition. While variola is a general infection, the specific organism is contained chiefly in the cutaneous lesions. The blood-vessels show a distinct dilatation throughout the whole cutis, increasing the blood-supply to the lesions. If now salvarsan is introduced into the blood and brought to the lesions, a marked destruction of organisms must follow, thereby ameliorating the disease by lessening the toxic absorption from the less toxic lesions. In verruca and ulcus tropicum we shall have to be content with the knowledge that salvarsan has curative properties for both. In the latter condition, however, I believe that the future will disclose one of the various forms of spirillum as a causative factor, and as before stated, salvarsan has reached its highest efficiency in all forms of spirillum infection.

CONCLUSIONS

From the foregoing study we are justified in formulating the following rules for the use of salvarsan in non-syphilitic diseases:

1. Salvarsan is specific in diseases caused by any variety of spirillum.
2. Salvarsan has curative properties in those diseases in which the infecting organisms are found in the blood or lymph, or in other locations where they can be easily reached.
3. Salvarsan has great therapeutic value in those diseases in which arsenic has been successfully used.
4. Salvarsan, if used with caution in repeated doses over a long period, has a therapeutic value in those diseases in which previously arsenic gave indifferent results.
5. Salvarsan, used as an adjuvant to some other drug or drugs, is useful in those diseases in which a decided and quick tonic, stimulating and alterative effect is desired, depending on the other drug or drugs for the ultimate result.
6. The mode of administration is important, and should be as follows: intravenous in those diseases in which a specific action is desired; full dose intra-

muscular injections repeated once or twice at long intervals (eight weeks), in those cases in which the tonic, stimulating and alterative effect is desired, as well as a certain specific action; small, oft-repeated (week or ten days) doses, intramuscularly, over a long period of time, in those chronic diseases in which a purely tonic, stimulating and alterative effect is desired.

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ABSTRACT OF DISCUSSION

Dr. John A. Fordyce, New York: I have not used salvarsan systematically in non-syphilitic diseases, but I have seen its effects on the coincident diseases of syphilitic patients, and in a few instances I have used it for non-syphilitic conditions. I have never seen any effect from it in psoriasis. In a case of mycosis fungoides it was used systematically without apparent benefit, but subsequent Roentgen-ray treatment had an apparently marvelous effect on the eruption. In a case of filariasis it had no effect. In a case of chorea in a boy with endocarditis the chorea was temporarily benefited, but there was a relapse soon afterward. In lichen planus it was also used without result.

Dr. James M. Winfield, Brooklyn: I question whether salvarsan, aside from its simple tonic effect, has any value in tuberculosis. In the case of leprosy mentioned by Dr. Best the patient seemed to improve much more rapidly under the combined treatment of tuberculin with chaulmoogra oil and salvarsan. In another case we used tuberculin and salvarsan, and that patient recovered and remained well for a long time. In a case of elephantiasis and filariasis the patient made a complete recovery. In a case of Vincent's angina we used salvarsan without any effect. In connection with chorea the question always arises whether it is true chorea or a manifestation of inherited syphilis.

F. W. Cregor, Indianapolis: The marvelous results attained from salvarsan in the control of syphilitic skin lesions, coupled with the reputation which arsenic has so long enjoyed in the treatment of various dermatoses, has suggested the use of salvarsan to the mind of many, even though the spirillum is not known or even suspected of being the cause of the disease in which it has been thought advisable to try the remedy. I treated one case of dermatitis herpetiformis for forty days, during the last thirty of which the patient was given a subcutaneous injection of sodium cacodylate, 3 grains daily, with only indifferent success. The patient was then lost sight of, and when she returned, three months later, there was an exacerbation of the eruption. She was then given a full dose of neosalvarsan, intravenously, and at the expiration of a week there was marked improvement. Following the second injection the case rapidly went on to complete recovery. Six months have now elapsed, and while perhaps on three occasions the patient has had a few discrete lesions, there has been no general exacerbation. Her improvement has been more marked under this treatment than under any other form of medication with which we are familiar.

Dr. Howard Fox, New York: In a paper read before this Association at Los Angeles, Dr. William B. Trimble and I reported on our first one hundred cases of syphilis treated by salvarsan. In two of these cases there were also well-marked eruptions of psoriasis which cleared up in a most favorable manner after salvarsan injections. As a result of this experience, I later treated nine cases of psoriasis with one or two injections of salvarsan but failed to obtain any material improvement in any case.

Dr. William Thomas Corlett, Cleveland: A word of caution might well be given lest the general practitioner get too glowing an idea of the value of salvarsan in non-syphilitic diseases. I have given salvarsan to syphilitic patients who were suffering from various concomitant diseases without producing any effect on them. I have also given it in psoriasis and pemphigus foliaceus with negative results. The same was true in one case of Duhring's disease, while in one case of premycotic stage of mycosis fungoides the patient was given four intravenous injections of neosalvarsan with very marked improvement.

Dr. William H. Best, Brooklyn: This treatment is still in its infancy, and we hope by further study and by changing the method of administration to get more constant results in those diseases included in Group B, which up to the present time have responded indifferently to salvarsan. As to the case of Vincent's angina, to which Dr. Winfield referred, there are ulcerative and necrotic conditions of the mouth and throat which are not due to the symbiotic action of Vincent's organisms, and Dr. Winfield's case may have been one of these. I am not advocating the use of salvarsan indiscriminately, but have tried to place the limits of its usefulness. In a number of diseases in which it has been used, I do not see how any results could be expected. These I have specifically named. It is gratifying to know, however, that in other diseases salvarsan has great therapeutic value. These diseases also I have specifically named. If the rules laid down for its use are conscientiously followed, I have no fear that the use of salvarsan will be an abuse.

EXPERIMENTAL CHRONIC GASTRIC ULCER

A SECOND CONTRIBUTION TO THE EXPERIMENTAL PATHOLOGY OF THE STOMACH*

J. C. FRIEDMAN, M.D.
AND
W. W. HAMBURGER, M.D.
CHICAGO

It is comparatively easy to produce experimentally acute ulcers in animals, and as far as gross and microscopic examinations go they resemble the same conditions in man. Common to all ulcers so produced, however, is the fact that they heal rapidly, healing being complete in the great majority of cases in from two to three weeks. In the human chronic ulcer, however, hyperacidity is present in at least half the cases, and it seemed to us, then, that if we added this factor to experimental acute ulcer, chronicity might be induced. Furthermore, it is a well-known clinical fact that stomachs with partial pyloric obstruction generally show hyperacidity, or, what is probably synonymous, hypersecretion; consequently we might induce hyperacidity experimentally by partially obstructing the pylorus and later in the same animals cause acute ulcers. To this end we tied a heavy silk ligature around the pylorus of dogs, just tight enough to produce moderate tension and marked peristalsis and antiperistalsis. We found that if just the right amount of tension is used, such stomachs will show marked dilatation and hypertrophy in from two to three weeks. If the ligature is tied more loosely, no effect is produced; if it is tied more tightly, complete pyloric obstruction results, with sudden exitus in from forty-eight to seventy-two hours, and symptoms at times resembling tetany. In animals successfully operated on, test meals from two to three weeks later show both stasis and hyperacidity.[1]

The test meals employed consisted of 300 c.c. milk and 100 gm. chopped beef, the latter fed, the former introduced through a stomach-tube. Fifty minutes later 1/20 grain apomorphin was given hypodermically, and the vomitus caught in a vessel, measured and examined in the usual way. As far as possible, the test meals were given the dogs before and after each operative procedure.

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* Read before the Section on Pathology and Physiology at the Sixty-Fifth Annual Session of the American Medical Association, Atlantic City, N. J., June, 1914.

* From the Nelson Morris Memorial Institute for Medical Research.

* Experimental Pyloric Stenosis, the first article of this series, will be published in the Archives of Internal Medicine.

[1] Dr. Hamburger will report elsewhere in detail on these and allied phases of our work.

The next step after producing a partial obstruction was to produce acute ulcers in these stomachs. This is comparatively easy, any number of methods having been previously successfully employed, and as far as the present work is concerned, any one of them might have been used. In general, the methods used have paralleled the clinical theories as to the etiology of ulcer, and may be divided broadly into (*a*) infectious, (*b*) toxic, both local and general, and (*c*) mechanical.

By infectious methods (*a*), acute ulcers have been produced by injecting various bacteria intravenously, such as streptococci, staphylococci, the *Bacillus coli*, pneumococci, etc., and by feeding bacteria. The toxic methods (*b*) have been either general, such as those observed by injecting diphtheria antitoxin, or local by injecting silver nitrate, epinephrin, liquor formaldehyd, nicotin, etc., into the walls of the stomach. The mechanical methods (*c*) include excising pieces of mucosa, tying off gastric arteries, and injecting various emulsions into gastric vessels. We selected the injection of silver nitrate into the submucosa as the surest method, using from 0.5 to 1 c.c. of a 5 per cent. solution. Each animal was injected in two or three places at the final operation, one injection being made near the pylorus, one near the middle of the lesser curvature, and one in the fundus.

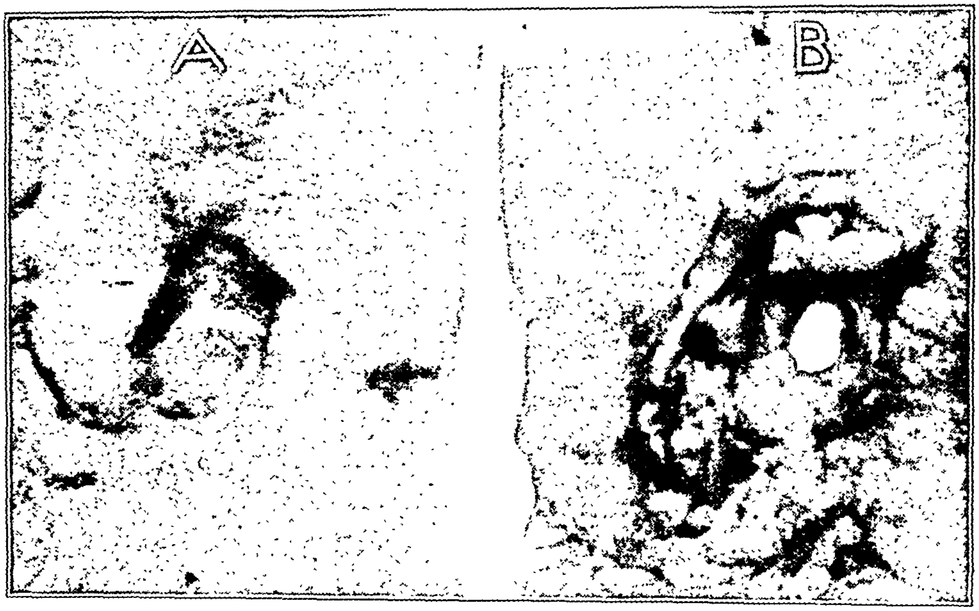

Fig. 1.—Acute ulcers, eight days after second operation.

These injections produce necrosis of the wall, and in from forty-eight to seventy-two hours the slough separates, being rapidly digested, and leaving ulcerated areas of varying depths and breadths, sometimes with smooth edges, as in Figure 1 *A*, sometimes with ragged edges, as in Figure 1 *B*. Perforations are frequent, hemorrhages much more seldom. Such ulcers, if produced in normal stomachs, heal in from two to three weeks. To return to the results of partial pyloric obstruction: These are shown in Tables 1 and 2, the first including cases in which post-mortems were done three weeks or more after the second operation, and unhealed ulcers found, the second, cases in which they had completely healed.

Of sixteen animals successfully operated on, the average total acidity before pyloric obstruction was 34, the average of all our animals being 30, the average, from three to four weeks after such obstruction, 50. Such increase, however, was not necessarily permanent, as in some cases, four weeks or so later, the acidity had dropped again, as in Case 51, Table 2, in which it dropped from 54 to 30, and in Case 42, Table 2, from 55 to 36. Another point is the total quantity of stomach-contents removed. This quantity varied in normal animals from 100 to 350 c.c., averaging about 200 c.c. After successful obstruction operations, the amount rose to various heights up to 1,000 c.c., and in general it can be seen from the tables that hyperacidity is present only in those cases in which the total contents are excessive, and, furthermore, that in some cases in which the total quantity of stomach-contents rose, the acidity rose with it. So in Case 41, Table 2, in which the total contents rose from 200 to 425 c.c.,

TABLE 1.—CHRONIC ULCERS

Case No.	Duration of Ulcer, Weeks	Stomach Contents				Condition of Stomach at Necropsy	Ulcers
		Acidity after First Operation	Acidity after Second Operation	Quantity after First Operation, c.c.	Quantity after Second Operation, c.c.		
48	5½	26	50	450	550	Moderate dilatation, great hypertrophy.	Two chronic pyloric ulcers. Two spontaneous duodenal ulcers.
35	9½	..	38	...	150	Small, slight hypertrophy.	Two small healing ulcers.
36	7½	..	26	...	350	Slight dilatation.	Small chronic pyloric ulcer.
37	8	..	50	...	350	Great dilatation.	Deep pyloric ulcer, 10 by 12 mm.
43	6½	25	36	400	200	Slight dilatation, great hypertrophy.	Chronic pyloric ulcer, 6 by 15 mm.
22	3	..	..	...	...	Great dilatation.	Chronic pyloric ulcer, 2 by 1 cm.
5	6	23	..	...	...	Great dilatation.	Healing ulcer, lesser curvature, 4 by 4 mm. Chronic pyloric ulcer.
55	7	51	42	950	1,050	Great dilatation.	Small chronic pyloric ulcer, .05 by 1 cm.
50	4½	75	64	300	250	Great dilatation and hypertrophy.	Superficial pyloric ulcer, 1 by 1 cm.

the acidity rising from 37 to 52 during this period, and in the cases mentioned above, Cases 51 and 42, Table 2, in which the acidity dropped to normal, the total quantities dropped also. The coincident variations of these two factors point to some relation between them, probably an identity. As stated at the outset, then, hyperacidity is probably simply a hypersecretion, and in many cases is dependent on impaired motility. We hope in the near future to work at this problem.

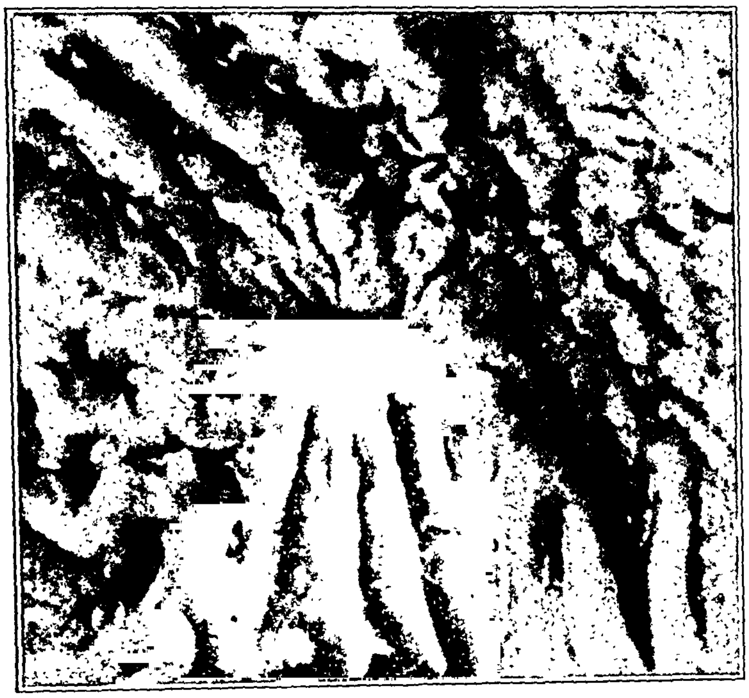

Fig. 2.—Chronic ulcer (delayed healing), three weeks after second operation.

To come now to the main problem, a comparison of these two tables shows the following facts:

In every case of Table 1 there was marked impairment of motility, as measured by the total quantity of stomach-contents recovered after test meals, and by the condition of the stomach found postmortem as to hypertrophy and dilatation. In each case a notation was made at necropsy, "greatly dilated," or at least "greatly hypertrophied," while only one case in seven of Table 2 (namely, of healed ulcers), was greatly dilated. The acidities varied, as stated above, and again it was in those cases in which the motility was most impaired, as measured by total stomach-contents and post-mortem dilatation, and the hyperacidity most pronounced, that the chronicity of the ulcer was most marked. So in Cases 48, 37, 22, 5, 55 and 50 (Table 1), from which our best specimens were obtained, the dilatation was very marked and the acidity high.

The types of ulcers which we have so produced can be divided into three classes: First, those which are apparently acute ulcers, in which healing is simply delayed. They have a puckered appearance, as though scar formation were slowly progressing (Fig. 2). These are similar to the ones described by Bolton,[1] who partially obstructed the pylorus in cats and considered this the only type so obtainable. Second, typical chronic ulcers, probably stationary, with rounded, overhanging edges and smooth fibrous bases (Fig. 3). Third, progressive chronic ulcers, as in Figure 4, in which the induration is not marked, but the evidences of autodigestion are evident, as indicated by the terracing at one end and the deep undermining at the other. No typical callous ulcers were found, the nearest approach being the one shown in Figure 5, in which the induration is limited to the base, which consists of excess of granulation tissue.

In two cases spontaneous duodenal ulcers were found at necropsy, just beyond the pylorus. In one case the thickened mucosa showed superficial ulceration. In the second case, Case 48, two typical round ulcers were present, one of which had perforated and caused peritonitis. These cases will be reported on later.

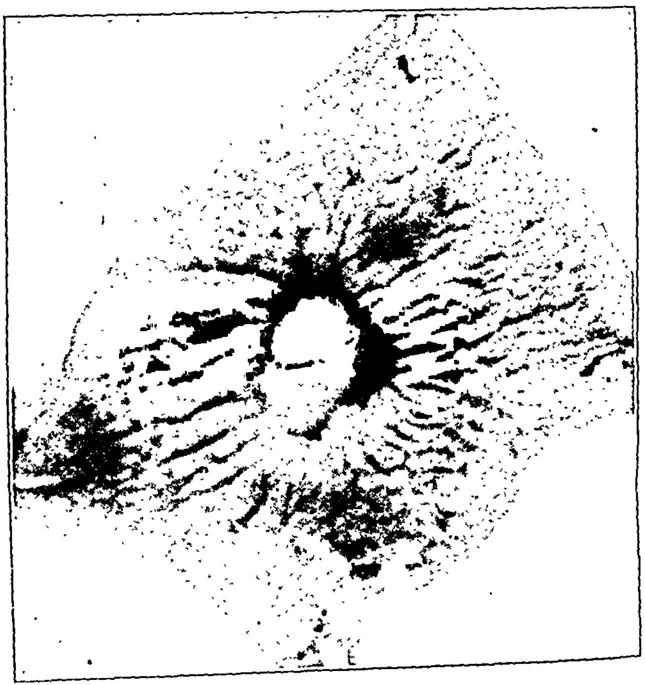

Fig. 3.—Chronic ulcer, five weeks after second operation.

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[1] Bolton: Further Observations on the Pathology of Gastric Ulcer, Proc. Roy. Soc., 1909-1910, lxxxii, B.

TABLE 2.—HEALED ULCERS

Case No.	Duration of Ulcer, Weeks	Stomach Contents				Condition of Stomach at Necropsy	Ulcers
		Acidity after First Operation	Acidity after Second Operation	Quantity after First Operation, c.c.	Quantity after Second Operation, c.c.		
38	7	26	36	...	550	Moderate dilatation.	None.
41	7½	37	52	200	425	Small.	None.
51	4½	54	30	350	200	Small.	None.
39	?	..	62	...	800	Great dilatation.	None.
42	?	55	36	250	325	Slight dilatation.	None.
26	2	..	..	...	...	Small.	One acute pyloric ulcer. One acute ulcer lesser curvature.
28	3	..	..	...	...	Small.	Two healing ulcers.

It will be remembered that each animal was injected with silver nitrate at the second operation in two or three different places, near the pylorus, lesser curvature and fundus. By reference to Table 1, it will be seen that in the majority of cases the pyloric ulcer alone remained unhealed, or in the cases in which two remained, the one near the pylorus was much larger in every way than the other. This is quite in accord with statistics in man, for instance, Fenwick's who states that acute ulcers are multiple in 50 per cent. of the cases, and situated irregularly throughout the stomach, while chronic ulcers are single in 80 per cent. of the cases, and situated near the pylorus in 75 per cent.

The simplest interpretation of these facts would be as follows: Acute ulcers tend to remain unhealed when exposed to the action of a very active gastric juice for an abnormally long period, and possibly the delay in healing is greater if the food and gastric juice are ground against the ulcers with unusual violence from hyperperistalsis. Consequently, at least three factors are necessary for the production of chronic ulcers in animals: *first*, a *local* destruction of the mucosa; second, an active or overactive gastric juice and third, prolonged or vigorous contact of the two (hyperperistalsis). This combination of chemical and mechanical factors results in either irritation of the floor and sides of the ulcers, with increased production of scar tissue, whence the callous ulcer, or further digestion of this inflamed, and, therefore, less resistant tissue, whence the progressive chronic ulcer and all its sequelae.

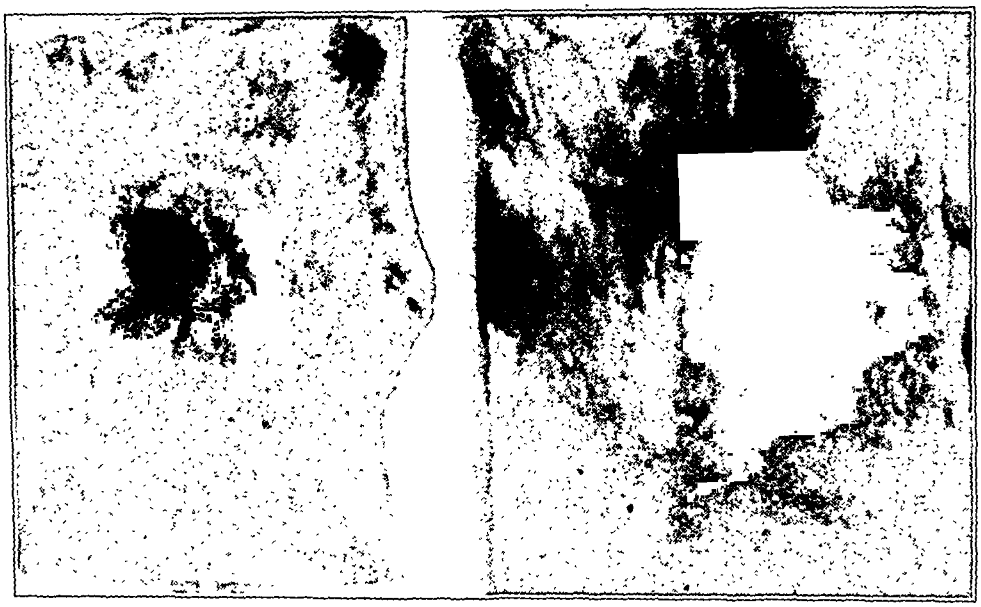

Fig. 4.—Chronic ulcers, five and one-half weeks after second operation; progressive.

Such an interpretation accounts for the healing of ulcers of the fundus. Two factors are concerned in this. The first is the difference in peristaltic activity between the fundus and the antrum, the former acting simply as a reservoir in which the food is not thoroughly mixed with gastric secretion and from which the contents are slowly pressed out into the active right half of the stomach.[2] Secondly, it has been repeatedly demonstrated that food in the fundus is only faintly acid, or even alkaline, while always strongly acid in the antrum of the normal stomach, that is, the gastric juice is practically inert in the fundus, so that from this fact also fundal ulcers tend to heal.

To apply these facts to ulcer in man: As to the first factor, we need only say that normal mucosa is, of course, not digested, and that the tissue must first be injured in some way—whether by bacterial emboli, by toxic products, as in burns or uremia, by trauma, or by any of the processes which cause gastritis. As to the second factor, we have used the term "an active gastric juice" advisedly because there is no reason why chronic ulcers should not be produced by normally acid juice acting on diseased tissue, if the other factors are present, and such is the fact in some of the cases of our series, as in Cases 36 and 43 of Table 1, and, of course, in over 40 per cent. of clinical cases. In describing the third factor, we spoke of prolonged or vigorous contact, or both, because we can readily see why an abnormally vigorous peristalsis, even acting for a normal period, should produce the same results as a less active for a longer period. Of course, in our work the peristalsis is both exceedingly vigorous and prolonged, as we demonstrated fluoroscopically in a number of our cases. Clinically, such prolonged contact is certainly present in a majority of the cases of ulcer of the stomach. For instance, Smithies[3] reports on 404 cases of ulcer of the stomach verified at operation, in 65.3 per cent. of which there was definite abnormal food retention. The abnormally vigorous contact as a furtherance to autodigestion is supplied, first, by the hyperperistalsis due to pylorospasm, which is seen fluoroscopically not infrequently in injuries to the mucosa anywhere in the gastro-intestinal tract, and, secondly, by the hour-glass contraction (also spasmodic) found by Barclay,[4] also fluoroscopically, in ulcer of the body of the stomach in 90 per cent. of the cases. This spasmodic narrowing would, of course, increase the friction of the food particles. That such friction plays some part in human ulcer is shown by Stromeyer's[5] studies on the typical funnel shape of ulcer, with the proximal end deeper and the mucosa undermined, the distal end being shallowed and terraced, a fact which he explains by the progression of the stomach contents toward the pylorus, and its glacier-like, eroding (that is, digestive) action. This we found in a number of our ulcers, as in Figure 5 *A*, an ulcer of five and one-half weeks' duration, situated 4 cm. from the pylorus, in which one end was quite deep, with undermined mucosa, toward the pylorus. The shallowed and terraced end was nearer the cardia, the opposite of Stromeyer's statement, to be sure, but natural when we remember that the progression of food in the antrum is not in an uninterrupted straight line toward the pylorus, but oscillatory first in one direction, then in the other, and that, therefore, the undermining by digestion may occur at either end.

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[2] Cannon: The Mechanical Factors of Digestion, p. 69.

[3] Smithies: Gastric Ulcer without Food Retention, Am. Jour. Med. Sc., March, 1913, p. 340.

[4] Barclay: The Stomach and Esophagus: A Radiographic Study.

[5] Stromeyer: Die Pathogenese des Ulcus Ventriculi, Beitr. z. path. Anat. u. z. allg. Path. (Ziegler's), liv, 1912, No. 1.

As a working hypothesis consistent with these experimental data, we may suppose either that acute ulcerations arise in the stomach from some outside cause and result reflexly in a pylorospasm, which again causes impaired motility, hypersecretion and hyperperistalsis, thus inducing chronicity; or that various conditions in the gastro-intestinal tract, as septic conditions in the mouth, mucous colitis, appendicitis, cholecystitis, etc., reflexly cause spastic contractions of various parts of the stomach, and narrowing of the lumen. If an abrasion occurs at the narrowed portion, for instance, from a coarse particle of food, the same process of digestion causes chronicity and the ulcer then perpetuates the spasm; or, more broadly, those persons whom we formerly termed neurasthenics, but who are now classed as vagotonics, may have pylorospasms from reflex causes in any part of the nervous system, and so the chain of events be set in motion (Barclay,[4] von Bergmann[6]).

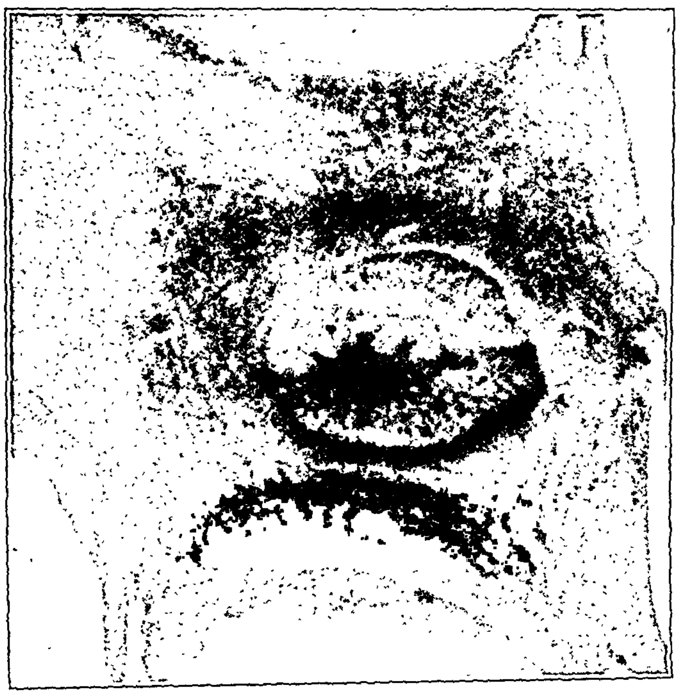

Fig. 5.—Chronic ulcer; markedly indurated base eight weeks after second operation.

SUMMARY

1. In the dog, chronic ulcers may arise from acute ulcerations, if certain factors are present, namely, prolonged and probably violent action of active gastric juice, that is, hypersecretion and hyperperistalsis, and that such ulcers may remain unhealed if the acidity later drops to normal. Other factors, such as anemia, absence of anti-pepsin, vascular obstruction, etc., are unnecessary presuppositions.

2. Stromeyer's theory of the digestive action of the gastric juice and the progress of food particles as determining the typical shape of ulcers is probably correct.

3. The majority of chronic ulcers are single and situated near the pylorus, because ulcers elsewhere tend to heal, the factors causing chronicity being usually present only near the pylorus.

29 East Madison Street—104 South Michigan Avenue.

ABSTRACT OF DISCUSSION

Prof. A. J. Carlson, Chicago: I observed a couple of years ago that about 75 per cent. of the dogs in which experimental parathyroid tetany had been produced showed certain types of ulcers in the duodenum and the pyloric mucosa. I thought at that time it indicated some relation between the parathyroids and these ulcers, as has been suggested by one of the previous speakers with reference to the internal secretions in general, but in extending the observations to cats I was quickly disabused of that premature conclusion in that I have never observed that phenomenon in cats in parathyroid tetany. I am inclined to believe that, of all the experimental animals, the dog is the one most prone to develop ulcers in the duodenum and in the pylorus without direct experimental interference that will tend to produce such ulcers. I do not mean by this to throw any doubt on the actual facts so beautifully shown by Dr. Rosenow with his streptococci injection or those reported by Dr. Friedman here to-day, but conclusions as regards the connection between the internal secretions and duodenal ulcers cannot be based on experiments on dogs alone.

Dr. E. C. Rosenow, Chicago: How long were these ulcers observed and were any cultures made from the depths of the ulcers which were produced experimentally? The results show clearly that obstruction of the pylorus in dogs delays the healing of ulcers produced by injections of silver nitrate and emphasize the rôle which obstruction undoubtedly plays in delaying healing of some ulcers in man; but why might not this be due to secondary infection of the walls of the ulcer made possible by rather than due directly to the interference with the function of the stomach? This it seems to me is a possibility which must be considered in view of the fact that the ulcers which I have produced by intravenous injections of streptococci from various sources, but of a particular grade of virulence and commonly with streptococci isolated from the depths of typical chronic indurated ulcers of the stomach and duodenum in man, tend to persist for a long time, occur most often in the pyloric end or duodenum, become indurated, may perforate or produce fatal hemorrhage and yield streptococci often in pure form as long as fourteen weeks after a single injection. Moreover, persistence of ulcers in man is not so uncommon when little or no disturbance of motor or secretory functions of the stomach can be made out.

Dr. J. C. Friedman, Chicago: First, as to Dr. Rosenow's question, the oldest chronic ulcer that I have is of ten weeks' duration. Of course, it is difficult to keep the dogs alive for a much longer period in a closed space. They get mangy and die spontaneously if we don't kill them. Secondly, we didn't make any cultures because we did not think that this was an etiologic factor in our ulcers. The reason why in cats one cannot produce ulcers as easily as in dogs may be connected with the different varieties of food that they eat. Surely, in the human, hyperacidity is present in the majority of cases of ulcer. Statistics show that hyperacidity is found in from 50 to 60 per cent. of the cases, and when we work experimentally we must take this functional change into consideration, and it may be that in Dr. Carlson's work these cats did not have any hyperacidity, while the dogs in the same experiments did. Therefore, the ulcers healed in the one and did not heal in the other. Now it is a known fact that one can produce acute ulcers in dogs and it is equally certain that in two or three weeks these ulcers heal and that therefore there must be some different etiologic factor in the ulcers which do not heal. As far as cutting out the suprarenal is concerned, not only do we destroy the internal secretions of that organ, but we also cause a vast change in the sympathetic system. Now it may be that the changes in the sympathetic system caused the ulcers without aid from the internal secretions.

Successful Medical Inspection.—The success of the work of medical inspection is judged by the reduction of the number of cases of contagious diseases and the number of physical defects corrected.—E. A. Montague in *Northwest Med.*

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6. Von Bergmann: Das spasmogene Ulcus Pepticum, München. med. Wchnschr., 1913, No. 4.

ADENOMYOMA OF THE RECTOVAGINAL SEPTUM*

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Prior to the publication, in February, 1913, of reports of Cuthbert Lockyer's cases of adenomyoma of the rectovaginal septum,[1] the occurrence of such growths in this region had apparently not been observed either by surgeons or by pathologists.

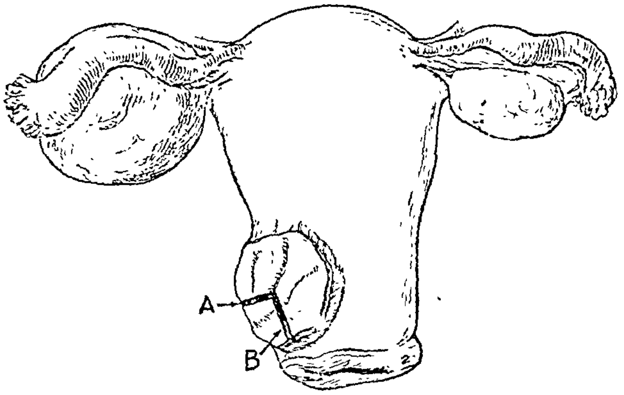

Fig. 1.—Adenomyoma of the rectovaginal septum, Case 1. A diagrammatic representation of the relation of the rectal tumor to the posterior uterine wall. Horizontal section taken at *A* is shown in Figures 2 and 3.

During the month of January, 1913, during which month Lockyer reported his cases, there were sent to me for diagnosis two rectovaginal tumors in which complete hysterectomy had been done. These proved to be counterparts of Lockyer's cases. It is through the courtesy of Dr. William S. Bainbridge, who operated on the patients, that I have the opportunity of reporting the cases.

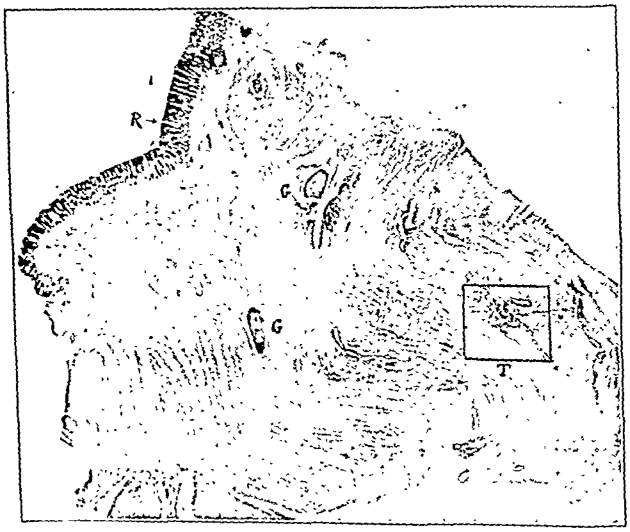

Fig. 2.—Adenomyoma of the rectovaginal septum, Case 1. Low-power view taken at *A*, Figure 1. At *R* is seen normal rectal mucosa. At *G* is an enlarged gland showing hemorrhage and exfoliation of epithelium into lumen. At *T* is a blocked-out area of glands and stroma shown in Figure 3.

Case 1.—Mrs. D., aged 36, was married but had had no children. There was no history of syphilis. One year previously she had been operated on for extra-uterine pregnancy. One small fibroid and the appendix were removed at this time. Menstruation had been regular up to three years ago, when she began to have dysmenorrhea and irregular flow. The present illness began two years ago with a gradual onset. The chief complaint was excessive menstruation, vaginal discharge and pain in the lower part of the abdomen. There had been loss of weight. Examination on admission to the hospital showed a mass between the uterus and rectum and attached to each. The uterus was enlarged and attached to the bladder and rectum. Cervix was ulcerated. The diagnosis was made of a "precancerous" uterus with probable malignant mass in culdesac.

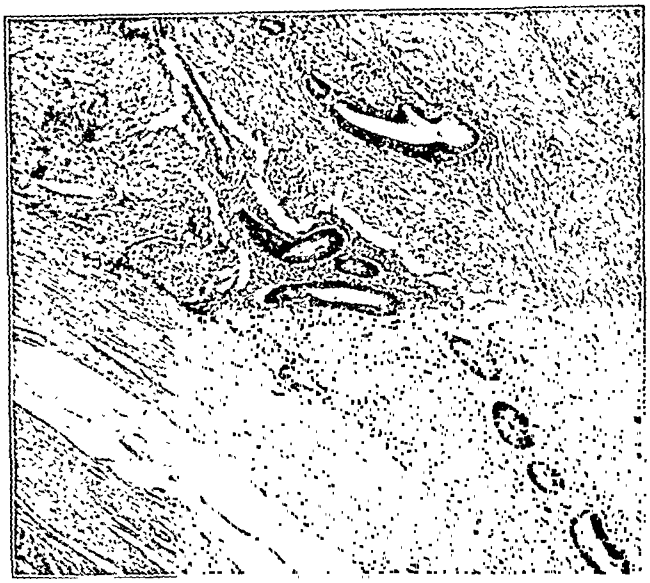

Fig. 3.—Adenomyoma of the rectovaginal septum, Case 1. High-power view of blocked-out area *T*, Figure 2. This shows islands of mucosa with the glands and stroma characteristic of uterine mucosa.

Operation was performed Jan. 9, 1913. Many pelvic adhesions were found. Complete hysterectomy was done with removal of pelvic lymph-nodes and ligation of the right internal iliac artery. In the culdesac a bridge of carcinoma-like tissue was found extending from the vesicovaginal junction posteriorly to the rectum and so blended with the latter that a partial excision of the wall of the rectum was necessary. The patient made an uneventful recovery, going home in four weeks and has been well ever since.

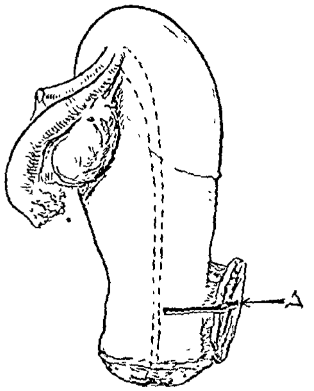

Fig. 4.—Adenomyoma of the rectovaginal septum, Case 2. A diagrammatic representation of the relation of the rectal tumor to the posterior wall of cervix. Horizontal sections taken at *A* are shown in Figures 5, 6 and 7.

Pathologic Report 2018: The tissues consist of the uterus, tubes and ovaries, portion of the rectum and pelvic nodes. The uterus is 8 cm. long and 6 by 5 cm. at fundus. The ovaries are enlarged and cystic, the largest 5 cm. in diameter. The uterine wall shows a fibroid 2 cm. in diameter. To the lower portion of the posterior wall of the uterus there is attached by a band of fibrous tissue a section of rectal mucous membrane measuring 3 by 2 cm. (Fig. 1). The rectal mucosa appears normal, but the tissue between it and the cervix is dense, and cuts like a fibroid.

Microscopic examination of the sections of the uterine body and cervix fails to show any malignant new growth. There is a chronic cervicitis and the pelvic nodes show chronic inflammatory changes. A horizontal section through the rectal tumor (Fig. 2) shows normal rectal glands and stroma and beneath this a broad zone of non-striated muscle. Scattered through the muscle are glands occurring singly or in groups, some lying within 1 mm. of the rectal mucosa. They are surrounded by a stroma of small round and oval cells. This stroma is more in evidence where there are several glands together. Some of the glands are enlarged or cystic and contain blood-cells and exfoliated epithelium, the result of hemorrhages into them. The epithelial cells lining the glands are cylindrical, and cilia can be demonstrated on the surface of some. The glands resemble those of the uterine mucosa rather than those of the rectum.

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* Read before the Section on Pathology and Physiology at the Sixty-Fifth Annual Session of the American Medical Association, Atlantic City, N. J., June, 1914.

* From the Research Department of the New York Skin and Cancer Hospital.

[1] Lockyer, Cuthbert: Proc. Roy. Soc. Med., 1913, vi, No. 4.

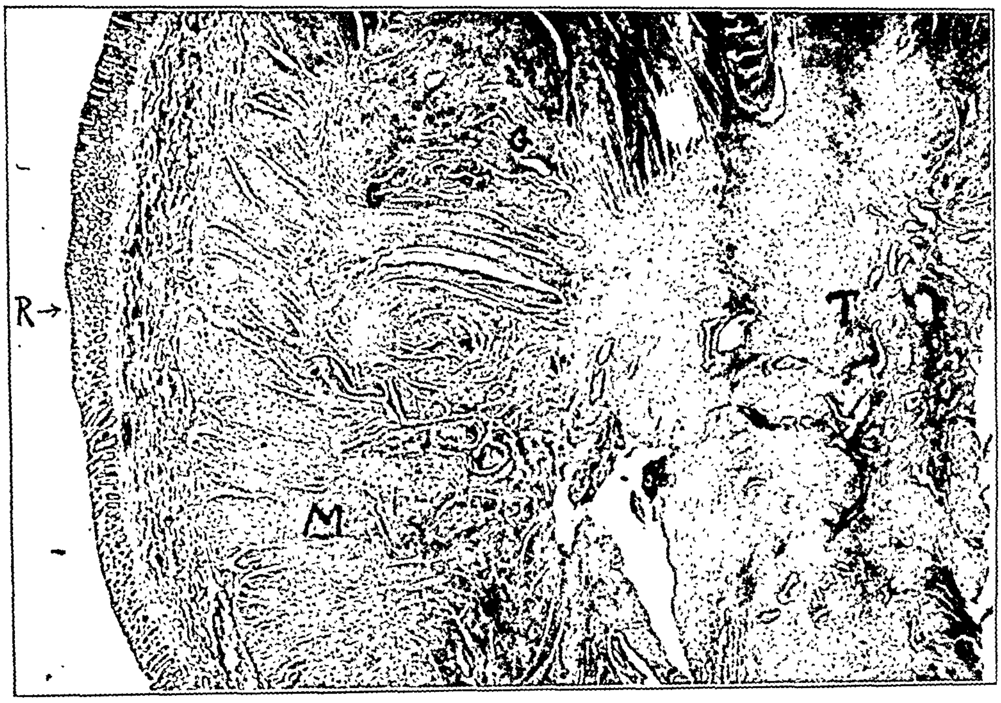

Fig. 5.—Adenomyoma of the rectovaginal septum, Case 2. Low-power photograph showing normal rectal mucosa at letter *R*. Beneath this is a growth of smooth muscle at *M*, with a few scattered glands at *G*, and a large group of them at *T*.

Case 2.—Mrs. F., aged 40, married, has two children, aged 17 and 13. She has never been seriously ill. The movements of the bowels have been irregular until three months ago when they became regular. She does not know what brought about the change. Ever since marriage there has been pain on the left side low down in the region of the ovary. This pain comes and goes without relation to the menstrual periods. Hemorrhoids have given her trouble for the past thirteen years and recently there has been bleeding from the rectum. Physical examination showed external and internal hemorrhoids, tenderness over the appendix and a large uterus with a lacerated cervix. A distinct hard mass was felt in the culdesac of Douglas, beginning to adhere to rectum. It was thought to be a uterine fibroid. Examination of this mass from the rectal side with a proctoscope showed an intact rectal mucosa but one which bled readily at the site of the tumor.

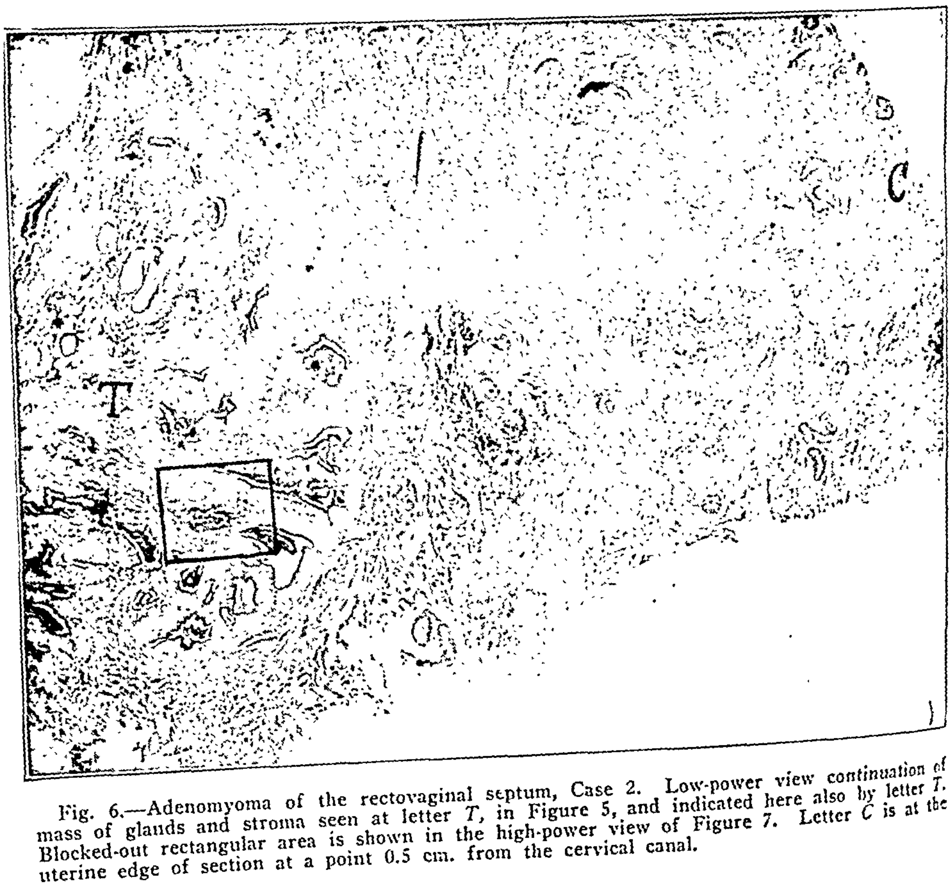

Fig. 6.—Adenomyoma of the rectovaginal septum, Case 2. Low-power view continuation of mass of glands and stroma seen at letter *T*, in Figure 5, and indicated here also by letter *T*. Blocked-out rectangular area is shown in the high-power view of Figure 7. Letter *C* is at the uterine edge of section at a point 0.5 cm. from the cervical canal.

Jan. 21, 1913, hysterectomy was performed with removal of the tubes and ovaries and appendix and a portion of the rectum. It was found that between the uterus and the rectum attaching together their peritoneum and muscular coats was a nodule ¾ inch in diameter with contracted tissue around it strongly suggesting malignancy. It was necessary to excise a piece of rectum to remove the growth.

Pathologic Report 2042: The uterus is 9 cm. long and 5 by 4 cm. at fundus. The wall is 2 cm. thick and the mucosa roughened. Both ovaries are cystic and enlarged. Tubes are thickened at fimbriated end and adherent to ovaries. There is a small area of rectal wall attached posteriorly to uterus by a band of fibrous tissue (Fig. 4). On section there is a hard fibrous base from 0.5 to 1 cm. deep lying beneath rectal mucosa.

Microscopic examination of sections of the uterus shows a chronic cervicitis. There are moderate inflammatory changes in the tubes and appendix. Rectal mass: sections were cut horizontally through from the rectum to within 0.5 cm. of the canal of the cervix (Figs. 5 and 6). Here as in Case 1, the rectal mucosa is normal. Beneath it is a growth of smooth muscle which extends through and is continuous with that of the cervix. Glands appear within 2 mm. of the rectal epithelium. They occur singly at first with very little stroma, but further in there is grouping of large numbers of them and at a depth of 1 cm. they form a nodule from 1 to 1.5 cm. in size. The epithelial lining cells are cylindrical and of the uterine type and cilia can be demonstrated. Between this group of glands and the cervical mucosa there is a distance of 2 cm. in which no glands can be seen. There is not so much cystic dilatation of the glands as in Case 1, but some show blood and detached epithelium as evidence of hemorrhage (Fig. 7).

DIAGNOSIS

These two cases presenting the same picture clinically and pathologically can be considered together from the point of view of diagnosis. While the microscopic picture was identical with that of cases of adenomyoma of the uterus which we had previously seen, the unusual location and the absence, at that time, of any records of such cases in the literature, led us to ask the opinion of Dr. Thomas S. Cullen, who on account of his well-known book[2] and other publications on the subject of adenomyōmas, would be in a position to confirm our diagnosis if correct. Dr. Cullen very kindly examined the slides that I mailed him and wrote me very fully his opinion of the cases. Since then he has published reports of two cases of his own with a review and discussion of Lockyer's cases.[3] I cannot do better than quote a portion of Dr. Cullen's views with regard to our cases. He writes:

> There is not a shadow of a doubt but that we are dealing with adenomyoma of the uterus in both cases. From what I can gather the growth is undoubtedly of the uterine type and not of the rectal and the fact that the rectal mucosa is perfectly normal and in no way encroached on also favors the idea of the uterine origin. Furthermore, if we are dealing with an adenomyoma of the rectum then we should expect the glands scattered throughout the tumor to consist of rectal glands and not uterine. Both of these growths are essentially adenomyomas of the uterus and they have undoubtedly involved the rectum secondarily. As you know, a certain number of these adenomyomas are particularly prone to form adhesions. This would naturally be more frequent in the cervical portion because the uterus there lies in close contact with the rectum.

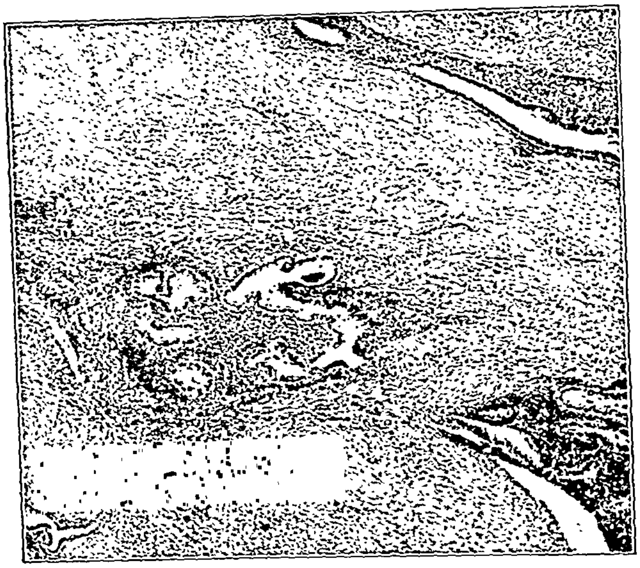

Fig. 7.—Adenomyoma of the rectovaginal septum, Case 2. High-power photograph of blocked-out area seen in Figure 6. Compare with the high-power view of the glands and stroma of Case 1, shown in Figure 3.

From the point of view of clinical diagnosis these tumors are of interest. Dr. Cullen has shown that some adenomyomas can be diagnosed by their increase in size at the menstrual period with accompanying pain and discomfort. This is doubtless due to congestion and hemorrhage such as is shown in our cases in which the glands contain blood-cells and epithelium. Examination of the histories, however, does not show that discomfort or pain if present was marked enough to be noted by the patients.

These tumors, while benign, have on physical examination the characteristic feeling of malignant growths on account of their density and tendency to form adhesions, and in both of our cases other surgeons had previously examined the patients and pronounced their condition inoperable on account of the apparent involvement of the rectum by a malignant growth.

That they may occur should be recognized by the surgeon, as the diagnosis can be made microscopically by a preliminary section. A simple excision of the mass would then cure the patient and there would be avoided the more serious operation of hysterectomy which would have been indicated if clinical diagnosis alone were relied on.

601 West One Hundred and Thirteenth Street.

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[2] Cullen, Thomas S.: Adenomyoma of the Uterus, Philadelphia, W. B. Saunders Company, 1908.

[3] Cullen, Thomas S.: Adenomyoma of the Rectovaginal Septum, The Journal A. M. A., March 14, 1914, p. 835.

A FEW PRACTICAL POINTS ON THE TREATMENT OF LEG-ULCERS*

A. RAVOGLI, M.D.
CINCINNATI

The ulcers of the legs, especially of the ankles, which are so frequently encountered in working-people, are of great interest on account of the difficulty of healing them. One of the characteristics of an ulcer is an open surface showing infiltration and necrotic process with no tendency to heal. The superficial molecular necrosis, or the disintegration of the connective tissues of the skin injured by long-standing infiltration, is the cause of the stubbornness of the ulcer. This molecular necrotic process is gradually produced, but sometimes is really a gangrene and the tissues are affected *en masse*.

In most of the cases the molecular necrosis is revealed by a yellowish coat on the ulcerated surface. As Kaposi[1] wrote, an ulcer is not a primary affection, but a secondary one, because it requires always a precedent inflammatory or neoplastic process, which has caused the molecular necrosis of the tissues and in consequence the prevention of healing.

Bell's classification[2] of ulcers as local or due to local causes, and symptomatic, due to constitutional systemic vice, still holds good. Yet considering the multiplicity of the causes which may act in one case in the production and continuation of the ulcer, we shall see that it is very difficult to accept this classification. In the production of the common ulcer resulting from varicose veins we may find traumatism, infection, phlebitis, periphlebitis, edema, eczema, all at the same time, as factors.

The division of ulcers into specific and non-specific is of great value in establishing the direct cause of their formation and maintenance. The ulcers which are known as constitutional may have syphilis or tuberculosis as their etiologic factor. Syphilitic gummas of the legs, when broken down, cause ulcers which are stubborn and difficult to cure. As Jadassohn[3] says, tuberculous ulcers of hematogenous origin are often localized in the legs, resulting from patches of erythema induratum. They have no indurated borders, and are of a peculiar bluish-red color. Tuberculous ulcers may also develop from cold abscesses in the legs, which, breaking down, cause ulcers.

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* Read before the Section on Dermatology at the Sixty-Fifth Annual Session of the American Medical Association, Atlantic City, N. J., June, 1914.

[1] Kaposi: Pathologie et traitement des maladies de la peau, Paris, 1891, p. 702.

[2] Bell: Treatise on Ulcer, Edinburgh, 1778.

[3] Jadassohn: Die Tuberkulose der Haut—Handbuch der Hautkrankheiten, Mracek, 1907, p. 251.

In our cases of common ulcers we see that traumatism, constant irritation, mechanical pressure, chemical, bacterial, dynamic, electrical action, all combined, may produce infiltration, which causes molecular disintegration of the tissues with the resulting ulcer.

In many cases the ulcer of the leg is caused by the occupation. It is often found in workingmen who are compelled to remain standing for many hours. On account of the vertical position the blood does not circulate easily; it remains stagnant in the veins, which become turgid and are seen superficially as bluish streaks under the thickened skin. This interference with the circulation often causes phlebitis; the tunics of the veins are infiltrated and broken, forming bluish dilatations or varicosities. The standing position renders more difficult the return of the blood which remains in the dilated veins. It causes a passive stasis, and as a result the lymph-vessels are involved, hindering the progress of the lymph. This causes an exudation to take place from the lymphatics; some coloring-matter of the blood, or even some blood escapes from the weakened tunics of the veins, causing edema, and a thickening of the derma and of the subcutaneous tissues (Fig. 1). It is not limited to the derma and subcutaneous connective tissues, but in some cases the infiltration goes deep to the fasciae and at times involves even the muscles.

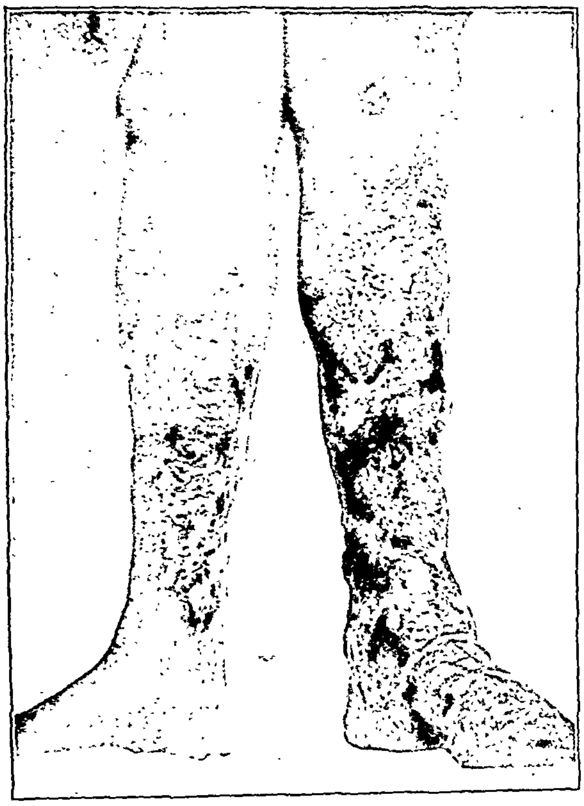

Fig. 1.—Infiltration of skin with edema from specific phlebitis.

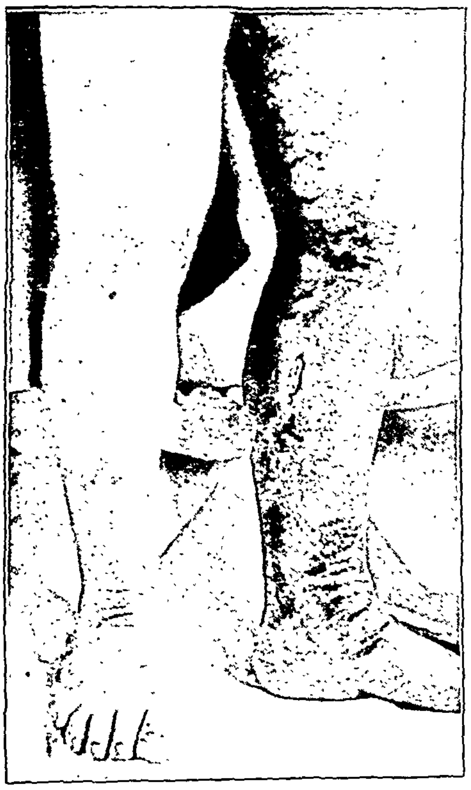

Fig. 2.—Ulcus cruris from phlebitis with intramuscular abscess.

The relation of the ulcer to varicose veins is yet a matter of dispute for the reason that many persons having varicosities do not suffer from ulcers. These considerations have prompted many authors to look for other causes.

Schreider[4] attributed the varicose veins and the leg ulcers to gouty diathesis, Quenu[5] and Silvy[6] to a neuritis secondary to the varicose veins as a trophoneurotic disturbance. As Douglas[7] says, however, it is easy to see the strict relation between varicose veins and the ulcer of the leg in phlebitis. Phlebitis and periphlebitis, in either the large or the small veins, in a thickened, hard and infiltrated skin is liable to produce abscesses (Fig. 2) which break down and form the starting-point of the ulcer. When the ulcer has been formed in a skin which has ceased to react, in persons usually neglectful of cleanliness, it will be a nest of bacteria, and a continuous source of infection. In my observations I have found, ordinarily, staphylococci, only rarely streptococci. The introduction of the streptococci in the lymph-spaces of the derma and in the lymph-vessels causes extensive erysipelas and cellulitis, which recurring leave a thickened skin and hard edema with swelling of the tissues, which often ends in elephantiasis (Fig. 3).

The possibility of trophoneurotic changes cannot be excluded, and there are some ulcers from local asphyxia of the tissues due to impaired trophic nervous action. This, however, cannot be maintained as a cause in the generality of leg ulcers. In the generality of the cases the enormous infiltration of the connective tissue elements and the diminished vitality of the skin are sufficient to cause the production of local necrosis and the formation of the ulcer. It is quite natural that when the skin has lost so much of its vitality, when it is thick and infiltrated, any contusion, pressure, scratch or rubbing is liable to start the molecular disintegration of the infiltrating elements and produce in consequence the leg ulcer.

On several occasions we have had examined, bacteriologically, the secretion and the detritus of the leg ulcers in the pathologic laboratory of the City Hospital. Bacteria have been found—staphylococci, streptococci, *Bacillus coli, Bacillus proteus* and most frequently *Bacillus pyocyaneus.*

Before the rules for the treatment of leg ulcers can be pointed out, it is necessary to recall the pathologic alterations found in the tissues. A piece of the edge of an ulcer was excised, hardened and sections taken for microscopic study. The microphotograph was made by Dr. Charles Goosman of the pathologic laboratory. The photomicrograph (Fig. 4) shows epidermic cells increased in quantity and in size, with an enormous proliferation of the rete mucosum. Between the papillae of the derma, columns of epithelium are seen separating the enlarged papillae. The epidermic cells remain soft and are not subject to keratinization. There is no sign of a horny layer. As the epithelial cells are not susceptible of being keratinized, they are unable to form the natural horny protection to the underlying tissues. The papillae of the derma are greatly enlarged and elongated; they show an enormous quantity of infiltrating cells, with proliferation of the connective tissue cells. The photomicrograph, Figure 5, shows the infiltration and the proliferation of the connective tissues. Their fibers are enlarged and the connective-tissue corpuscles or fusiform cells contain several nuclei in process of proliferation. Plasma-cells are found showing some attempt at defense on the part of the connective tissues. The blood-vessels are greatly enlarged and are surrounded by extravasated blood-corpuscles. Newly-formed blood-vessels are produced by the existing capillaries, increasing the vascularity of the tissues.

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[4] Schreider: Thèse de Paris, 1883, quoted by John Douglas, Reference, Handbook of the Medical Sciences, New York, 1900, vii, 937.

[5] Quenu: Rev. d. chir., 1882, p. 887; quoted by Douglas, see Note 4.

[6] Silvy: Thèse de Paris, 1900.

[7] Douglas, John: Ulcer, Reference Handbook of the Medical Sciences, New York, 1900, vii, 938.

The exudation into the tissues causes their softening, and as a result of this pressure, the nutrition is cut off. Moreover, the presence of bacteria with their toxins, causes the death of the cells, which fall into necrosis. These dead tissues, disintegrated, are thrown off the surface together with the products of exudation. In some cases the process occurs in mass and then gangrene results with destruction of the skin. In other cases cellulitis and phlebitis occur from the bacterial infections with formation of deep abscesses as shown in Figure 2.

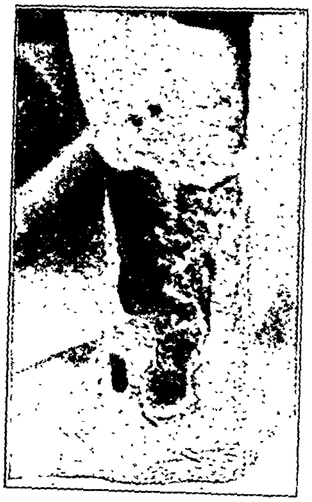

Fig. 3.—Ulcus cruris with edema and elephantiasis.

Examining the surface of an ulcer in gross, it appears covered with a yellowish-white film caused by the overproduction of round cells, together with the exudation of serum, fibrin and the detritus of the tissues. When the necrosis is extensive then croupous masses are adherent to the bottom of the ulcer over the connective elements. In the so-called callous ulcers the edges are considerably raised above the surface of the ulcer, owing to the epithelial proliferation (Fig. 6).

From the preceding considerations it is easy to see that in ulceration three periods occur: necrosis, sloughing and reparation. On these periods depend the selection of the treatment.

The first period is marked by acute inflammatory symptoms. Infection is shown in the whole area of destroyed skin, the base of the ulcer is depressed and covered with dirty grayish-yellow sloughs. The edges are usually clean cut and inflamed; the surrounding tissues are red, congested and swollen, discharging seropurulent and blood-stained fluid. These conditions are usually accompanied with severe pain. It is at this period that patients go to the druggist asking for some kind of salve to stop the pain. In my practice some of the patients had used one or another kind of salve or paste, which, consisting of resorcin or tar with cocain or other local anesthetics, increases the inflammation and the gangrenous process. The patient is delighted on account of the diminished pain with the result of the application of these salves, and at the same time the condition of the ulcer is always made worse. The application of pastes at this period is very injudicious, because it renders difficult the sloughing off of the gangrenous masses, retains the bacteria-laden secretion and consequently increases the inflammation. The best application at this period is water, usually hot, between 80 and 90 F., and containing some antiseptic preparation. In our practice, both hospital and private, we dissolve sodium bicarbonate or biborate in the water.

Sodium bicarbonate is purely alkaline, like normal salt but to a less degree, and in consequence is less irritant. Sodium borate on account of its alkalinity has slight antiseptic power but diminishes the irritation and the inflammatory symptoms through the removal of bacteria, foul secretions, detritus, etc. In case the ulcers are very foul we use solutions of mercuric chlorid from 1 : 5000 to 1 : 2000, either as a continuous bath or in moist compresses; but so soon as the odor has been eliminated we return to the sodium borate or bicarbonate bathing, because the use of the mercuric chlorid causes irritation of the surrounding skin. In some cases, especially when *Bacillus pyocyaneus* is present, we have found phenol useful in solutions of from 1 to 2 per cent. in warm water. If the patient can rest in a horizontal position with his leg somewhat elevated, the pain and the inflammatory symptoms will subside sooner. The gangrenous and necrotic detritus begins to slough off and a clean surface with healthy granulations appears.

When the surface of the ulcer has reached this condition it needs to be dressed with some remedy which will cover and protect the granulations, remove the secretion, and keep the surface sterile. A great many salves and liniments have been recommended for this purpose. One of the oldest standbys has been the mixture of castor-oil and from 10 to 50 per cent. of balsam of Peru. It has antiseptic power, keeps the surface protected, and promotes granulations. In some cases it is irritant and has produced dermatitis, and for this reason we use this dressing so long as it is useful, and then change it for a more suitable application. Unna[8] studied the different remedies that

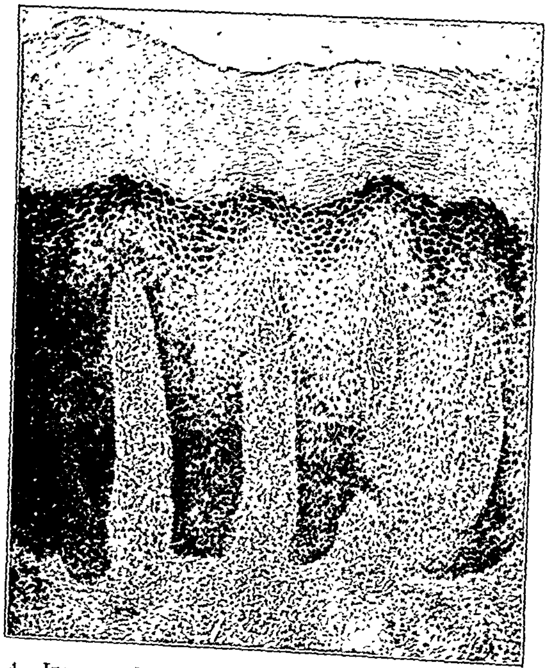

Fig. 4.—Increase of the epithelial layers, lack of horny layers, hypertrophic papillae and infiltration of the corium; from a photomicrograph.

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[8] Unna: Monatsh. f. Prakt. Dermat., 1891, xiii, 523; Weitere Versuche über die reduzie renden Heilmittel, Deutsch. Med.-Ztg., 1897, No. 69; ref. Monatsh. f. Prakt. Dermat., 1898, xxvi, 114.

favor or delay cicatrization. Indeed, in order that recovery may ensue, two processes must take place, one, the formation of granulations and the other, the formation of good, solid epithelium to cover the granulations and to protect the tissues beneath for the physiologic purposes of repair. It will be easily understood that many remedies which favor the granulations or dermatoplasia, delay or entirely prevent the formation of epithelium. For this last purpose the application of remedies capable of producing oxygen seems to be the best.

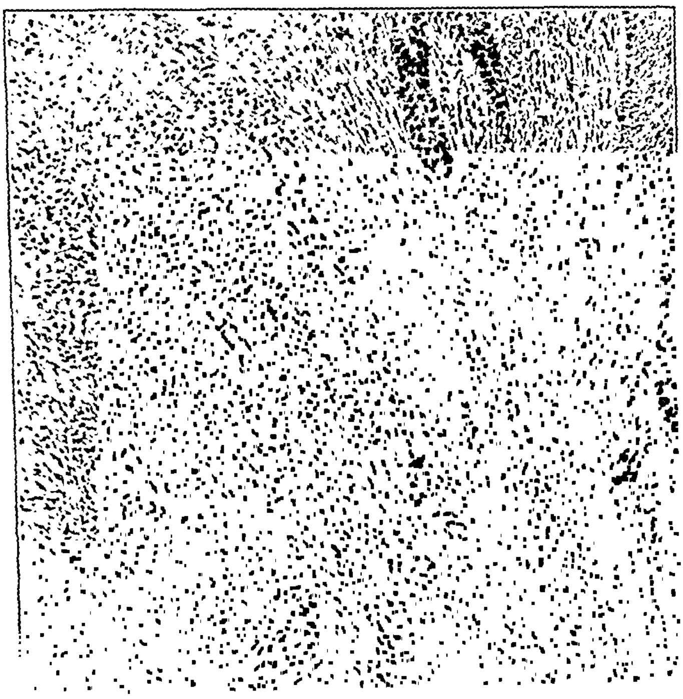

Fig. 5.—Infiltration of the connective elements with proliferation of the cells; from a photomicrograph.

Unna[9] praises pyrogallic acid and asserts that while it could destroy lupus nodules, at the same time by its oxygenating power it could hasten the formation of the scar. For the same purpose he recommends ichthyol, which he places among the reducent agents. For many years, to dress leg ulcers, we have used diachylon salve containing 1 dram of ichthyol to the ounce of ointment. We have obtained very good results and in many obstinate cases we are still using this dressing with beneficial effects. In ordinary cases we find useful the application of petrolatum with 2 per cent. of boric acid spread on a piece of lint, which is changed twice a day. In order to cause an exudate of serum, we have added lanolin, following the formula of Frank C. Carlton, as reported by Wade[10]:

Boric acid	8	ʒ ii
Lanolin .... Petrolatum, of each........	60	℥ ii

In many cases of painful irritable ulcers we have found of great benefit the application of a mixture of 20 grains of calomel to an ounce of benzoinated oxid of zinc ointment, Wilson.

Some time ago every leg ulcer was dressed with scarlet-red salve toluyl-azo-beta-naphthol. Von Schmieden and Hayward[11] assert that this highly-colored substance destroys the bacteria and promotes the formation of granulations, and of new epithelium. Scheele,[12] however, called attention to poisoning from the use of scarlet-red and especially to its dangerous action on the kidneys as revealed by albuminuria. Gurbski[13] reported a case of general poisoning with albuminuria after the application of this salve. Lombardo[14] referred to anaphylaxis as the cause of a case of generalized dermatitis from the use of scarlet-red salve. In our service in the city hospital it was used for some time on old, chronic leg ulcers without any perceptible benefit. In some cases the patients disliked the dressing on account of the irritation, and we were compelled to return to our borated ointment, or to our wet compresses to relieve the irritation.

May and Heidingsfeld[15] proposed basic fuchsin in place of the toluyl-azo-beta-naphthol asserting that it caused less irritation and better antiseptic action. Some use thick pastes with picric acid and other ingredients. In our experience we have found that the pastes have to be avoided. They form a thick, heavy crust, which prevents the discharge of the exuded serum, irritates the granulating surface, increases the suppuration and prevents the keratoplasia, which must form the regular solid cicatrix.

When the surface of the ulcer is free from necrotic detritus, when it is clean and the granulations begin to form, we must watch the process of reparation. The granulations must be protected from infection and from irritation, so that they do not proliferate. To hold the granulations within certain limits, we must paint the surface with silver nitrate solution of from 3 to 6 per cent., every two or three days, or, better, with tincture of iodin. Any salve or any dressing with gauze or salve, or a liniment having moderate antiseptic qualities, capable of removing the serum and protecting the surface from the contact of the air, from physiologic or pathologic discharges and from the contact of the clothes, will give good service. In case some syphilitic condition is suspected the application of mercurial plaster will be found always useful.

Massage of the leg with alcohol to promote circulation when the patient is in a recumbent position with the limb elevated has been highly recommended. Surgical treatment is often necessary. When the edges of the ulcer thicken from a superabundance of epidermic production and the formation of the cicatrix does not proceed regularly, the callous edge must be removed. In some cases the Nussbaum process, encircling the ulcer with incisions at a distance of half an inch from the edge, has given good results. When the

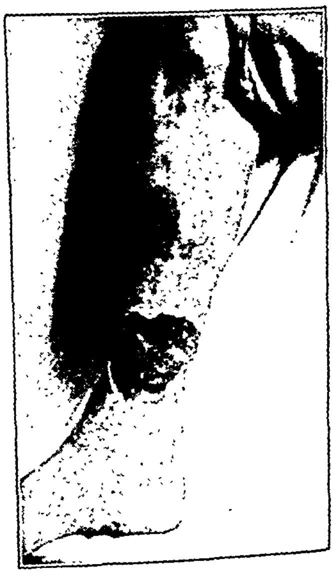

Fig. 6.—Ulcus cruris with superabundant granulations.

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9. Unna: Ueberhäutung und Ueberhornung (Dermatoplasie und Keratoplasie), Berl. klin. Wchnschr., 1883, No. 35.

10. Wade, Ben. N.: The Management of Chronic Ulcers of the Leg, New York Med. Jour., Feb. 1, 1913, p. 244.

11. Von Schmieden and Hayward: Der heutige Stand der experimentellen und therapeutischen Verwertung der Scharlachfarbstoffe, Deutsch. Ztschr. f. Chir., 1911, cxii, Heft. 4 and 6.

12. Scheele, Karl: Die klinische Bedeutung der Giftigkeit von Scharlach-Farbstoffen in Salben, Diss. Berlin, 1912, reference in Dermat. Wchnschr., 1912, lv, 1634.

13. Gurbski, St.: Zentralbl. f. Chir., 1910, No. 49, reference in Monatsch. f. prakt. Dermat., 1911, liii, 42.

14. Lombardo: Un case di anafilassi per il rosso scarlatto, Gior. ital. d. mal. ven., 1911,

15. May, Eugene S., and Heidingsfeld, M. L.: Basic Fuchsin in Chronic Leg Ulcer, The Journal A. M. A., May 31, 1913, p. 1680.

thick epidermic layer has been removed by means of a thin scalpel the edges are detached and the ulcer may be strapped with adhesive plaster, to change its shape and to bring its edges as close together as possible. In many cases when the granulations are superabundant and a cicatrix is not obtained, the best method is to scrape the granulations thoroughly, making a regular wound, and to cover the surface with epidermic grafts, following the Thiersch method. In several cases of obstinate ulcers we have obtained very good results from this method. When large varicosities are present the veins must be tied or extirpated. In case of cellulitis the abscesses must be opened and the pus drained. The eczema which so often complicates varicose ulcers must be treated at the same time.

Internal treatment must be given, according to the condition of the patient. In my hospital and private practice I always advise the use of potassium iodid, from the knowledge that phlebitis is often originated, maintained and aggravated by a luetic condition. The use of an alkaline purgative is recommended when constipation is present and there is some gouty tendency. In case of anemia from poor nutrition, iron tonics, digitalis or nux vomica should be given according to the condition of the patient.

When recovery has been obtained, the patient must be protected from relapses. We advise our patients to bathe the legs twice a day, to rub and massage the affected leg with a 2 per cent. alcoholic solution of phenol and when dry, to dust it with rice powder or talcum powder; also, in the day time, to wear a well-fitted elastic stocking to prevent the swelling of the leg.

5 Garfield Place.

ABSTRACT OF DISCUSSION

Dr. Frank E. Simpson, Chicago: We usually treat these cases by the application of Unna's gelatin-zinc, covered with a bandage. Under this they heal rapidly, as a rule. The kind of local application, I think, is of secondary importance.

Dr. J. B. Kessler, Iowa City, Iowa: I am using the basic fuchsin paste, and find it less irritating than the scarlet red. More recently, in the treatment of these leg ulcers, I have come to regard the local application as comparatively unimportant and rely largely on elevation of the foot of the bed from 4 to 6 inches and the snug application of an open-mesh bandage during the day.

Dr. M. L. Heidingsfeld, Cincinnati: The results which Dr. May and myself obtained with basic fuchsin and noted by Dr. Ravogli, still obtain. The remedy, however, must be used with judgment and discretion with regard to strength of the remedy and frequency of application. In some a 0.25 per cent. to 0.5 per cent. ointment is too stimulating, while in others a 2 per cent. to 3 per cent. ointment is readily tolerated. The same is true of balsam of Peru, favorably mentioned by Dr. Ravogli. A 2 per cent. balsam of Peru ointment, applied every few hours, has answered admirably well in my personal experience. There must be a fundamental cause for every chronic leg ulcer. It may be syphilis in one case, varicose veins in another, tuberculosis in a third, etc., and ultimate success can only crown our efforts when the cause is definitely established and properly controlled.

Dr. Martin F. Engman, St. Louis: The majority of these leg ulcers are seen in middle-aged people with poor cardiac compensation, and it is sometimes remarkable to see the beneficial results following regulation of the condition of the heart by the administration of digitalis, etc. These patients are usually found among the working classes who are compelled to stand many hours daily; they are much less frequent among the idle class of women.

Dr. A. Ravogli, Cincinnati: In my published paper I spoke of the importance of constitutional treatment of leg ulcers, and the beneficial effect that often followed the administration of digitalis, potassium iodid and other drugs.

PELVIC VARICOCELE *

WILLIAM EDGAR DARNALL, A.M., M.D.

ATLANTIC CITY, N. J.

The subject of pelvic varicosities is little discussed, little understood and little written about. It is, however, of sufficient importance to be the cause of considerable suffering among women. Pelvic varicocele or varicocele of the broad ligaments consists of a more or less permanent dilatation of the veins of the pampiniform plexus. The condition is not so uncommon as has been supposed. There are few operators of long and extensive experience who do not come across cases of this kind in their gynecologic work, yet the literature on the subject is exceedingly meager. The first case reported in this country was that of Dr. Dwight of Boston in 1887. A. P. Dudley and Zinke of this country have written exhaustively on this subject. Dudley reported four cases, Malins of Birmingham found two more and to these Zinke adds two cases. Rousans states that it is quite common. Winkel, cited by Reed, found the condition present only ten times in 300 necropsies. I have operated in ten cases during the past year.

We must remember that there is a reason for almost every physical discomfort if we can but run it down, and there is a reason for the child-bearing woman who vainly goes from one physician to another with aching pains in the pelvis and back, dragging sensation worse on standing and walking and worse at the menstrual period, and suffering from all the symptoms of pelvic engorgement and pelvic irritation, although the examining physician may not be able to palpate anything on physical examination on which to base a diagnosis. By reason of a failure to find anything tangible, the woman is often assured that there is absolutely nothing the matter and is in the mind of her doctor consigned to that large class of neurotics with magnified imaginary symptoms which center in the pelvis.

The anatomy of the uterus shows that the uterovaginal plexus of veins extends over the walls of the vagina, and as an especially close plexus along the lateral margins of the uterus, collecting the blood from the uterine veins which surround the uterine artery, and forming broad anastomoses with the pampiniform plexus of the ovarian veins.

The causes of varicocele of the broad ligament are more or less obscure. These veins may become very much enlarged in pregnancy. This enlargement may be due to some form of obstruction to the return circulation due to the position of the organ, wearing tight clothing, etc. It was my rare privilege recently, during an operation for cesarean section, to observe just how large these veins may become. The patient was a young negress of 24 with a justo minor pelvis. The usual operation for cesarean section was done, and when the abdomen was entered, the right broad ligament presented a worm-like tortuous bunch of veins, the main trunk being as large as the index-finger. It is easy enough to imagine that after delivery when the involution of the uterus is not perfect there may be a failure on the part of these overdistended veins to regain their normal size and tone just as often is the case with the long saphenous vein of the leg.

The condition most often prevails in women who have borne one or more children, and especially if the turbance. This patient never having been pregnant, the case confirms my opinion that these pelvic varicosities may follow pathologic menstruation, although it may take a long time for the accumulated effect to be known. This may also prove that the symptomatology may be arrived at through surgical work on the pelvis.

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* Read before the Section on Obstetrics, Gynecology and Abdominal Surgery at the Sixty-Fifth Annual Session of the American Medical Association, Atlantic City, N. J., June, 1914.

Dr. J. H. Carstens, Detroit: The cases I have seen have always been in connection with some pathologic condition. They do not seem to me to be very common. I have seen a couple which I found afterward without having diagnosed the trouble, but these cases all have some kind of trouble for which you operate; so really the end of the whole subject is that there are certain cases in which the symptoms are very obscure and in which you cannot find any enlargement of the veins in the vagina. Usually the only symptoms are pain and a sense of dragging and other symptoms, which require exploratory operation. I think the pathology is the same as in varicocele of the man; it is a matter of anatomy in which there is apt to be enlargement of the veins.

Dr. S. M. Miller, Peoria: This subject is far more important than we have considered it to be. I have run across the condition a number of times at operation when it has not been previously diagnosed. I have a number of times confirmed the condition at operation when only a tentative diagnosis had been made. I seldom have had the temerity to make such a diagnosis *per se* because the condition was accompanied by no definite symptoms except one mentioned in a German publication.

It has been remarked that, if the patient is examined in the upright position, the veins of the vaginal plexus may be felt as a doughy mass. Dr. Kanavel of Chicago and I brought this to the attention of the medical profession eight or nine years ago in the *American Journal of Obstetrics*, dividing it into two classes, the primary and the secondary. By secondary we mean those cases which follow other pelvic lesions and are commonly found accompanying the condition. In that event the treatment would not resolve itself into ablation of the veins, but would be applied to the primary condition. It is usually accompanied by other complicated conditions than the cause of the varicose veins. I have seen an almost hard, white, small, friable, cystic ovary which I believed to be the result of varicosity of the vaginal plexus. This is not proved but would seem to be the solution of the small cystic fibrous ovary with varicose veins in the vaginal plexus. The pain may be of two varieties: pain on standing, aggravated at the periods, and pain in the ovary itself. These small ovaries with cysts are painful; pain is present at any time; this is an end-result. The proportion of primary to secondary cases is one to ten. The large number of secondary is due to pelvic relaxation. In illustration, I operated on a primary case in a woman who had no pregnancy and who was sterile. These multiple cystic fibrous ovaries, the result of varicosity, will result in sterilization. I had been able to find nothing in examination of the woman. She had had a painful left ovary. At operation this was obliterated with the broad ligament. Pain and tenderness have now recurred in the right ovary. The condition I believe is very often overlooked at operation because it is more emphasized with the patient in the upright position than in the Trendelenburg position, and unless one is looking specifically for the condition it will in many cases be overlooked. I have treated the condition in two or three ways, in some cases entirely obliterating the ovary, tube and broad ligament; in others, I have sectioned the broad ligament; still others, I have quilted under the broad ligament and the fallopian tube, and then further down have repeated the quilting. Mere ligation at one point will not correct the condition. The treatment has been successful, but difficult because it cannot be accomplished without troublesome hemorrhage from these freely bleeding veins.

Dr. Hugo Pantzer, Indianapolis: I have found this condition dissociated from other active causes in two or three cases only; these impressed me with its importance. The first case, reported in the early nineties before our local gynecologic society, was that of a woman in whom I found a large doughy mass on the right side and felt that it was owing to some ovarian circulatory disturbance. When I next saw the patient in bed I failed to find anything. The next time she came to my office, and the mass was again found on examination. The diagnosis of pelvic varices was then made. The patient died of typhoid fever shortly afterward. I have not operated on any of my cases. I would regard the sclerotic ovary as rarely a cause, if ever, of pelvic varices.

Dr. Swithin Chandler, Philadelphia: Twelve years ago I examined a bladder and noticed on the left side much congestion. I was unfamiliar with this condition, and wrote to several men concerning it. I think it was Dr. Kelly of Baltimore, who suggested that probably there were enlarged veins on the left side, which would occasion this condition of the bladder. On that suggestion I opened the abdominal cavity and found the condition mentioned. There are three different phases of the question: diagnostic, complications during the operation, and the condition after an operation. The symptoms which Dr. Darnall has detailed are quite classical. It seems to me that this paper should go broadcast in order that the general practitioner may realize that this symptomatology is not merely a part of a woman's nervous and hysterical condition. I saw a man operate on a case in which the diagnosis had been made of a tear in the cervix and an enlarged ovary. The abdomen was opened, the cavity explored and nothing seen. The operator then sewed up the cervix and left an enlarged vein, which I am sure is going to give trouble. In the after result the cases should be carefully watched. In one case of enlarged veins I did a Baldy operation. That is the only operation I know that will hold up the uterus and the ovary and bring a perfect gravity situation into play. The woman was thoroughly relieved. Had the veins been larger I would have done what Dr. Darnall has described, and it might have been wiser, but the patient was entirely relieved. I believe so firmly in the Baldy operation that I took a chance and the operation was successful.

Dr. E. Gustav Zinke, Cincinnati: A peculiar circumstance happened a few weeks ago after I had written on the subject. The patient was about 35 years old, the mother of two children, both prematurely born, with a history of persistent bleeding throughout the entire period of pregnancy in each instance. When I was first called to see her she was pregnant apparently six weeks and she bled quite profusely, but because of her pregnancy I put her on her back. The os was not opened, the cervix not obliterated, and there was no evidence of any miscarriage except the hemorrhage. I was in hopes that by rest and the application of an ice-bag I might arrest the hemorrhage and prevent abortion. She continued to bleed, however. I therefore curetted and packed the uterus. After removing the gauze at the end of forty-eight hours she was apparently free from hemorrhage. Next day she was bleeding again and this continued in greater or less degree for four or five months. When she became gradually exsanguinated I said that something was wrong, we must open the abdominal cavity and see what the difficulty was. Of course I had no idea that she was pregnant again or I should not have opened the abdomen; but it was a good thing I didn't know she was pregnant, for when I opened the abdomen the entire pelvic cavity was filled with a mass of varicose veins, and out of the center appeared a flaccid, transparent cyst, which appeared to me to be parovarian. My first impulse was to remove that cyst. I pulled it out of the abdomen with a pair of forceps, when it contracted and became as firm as a cricket-ball. I removed the forceps, put a warm sponge on the place where I had had hold of it with the forceps, until the hemorrhage ceased, dropped it back into the abdominal cavity, sewed up the wound and she went to the end of her term, giving birth to a living child which was apparently perfectly well. She has not had a pain or ache since. I do not know what has become of the varicosities; they cannot be felt. Whether they existed merely because of the pregnancy, I do not know. The case is one which cannot be explained. I have never been satisfied concerning it.

DR. W. E. DARNALL, Atlantic City: Dr. Zinke's case is exceptional. Ordinary one would have expected his patient to have had much pain and discomfort. What became of the pelvic varicosities which he did not remove, it is hard to say. Dr. Carstens says he does not find these veins except with other gross pathologic lesions. Perhaps if he looked for them more carefully he would find them. I think we surgeons, particularly, get into the habit of neglecting clinical symptoms and depending too largely on what we can palpate, while the clinical symptoms are relegated to a remote corner of our diagnostic brain. I have a feeling that Dr. Miller is right about the complicating conditions being a result rather than a cause of varicose veins, but of course this is rather hard to prove. My experience coincides with his that the patient refers the pain to the ovary and is so firmly convinced that she has ovarian trouble that she will ask for an examination, and if the examiner tells her her ovaries are all right she will often go to some one else, feeling that from the pain she suffers she must have some affection of the ovary which the first physician could not discover. Varicose veins can rarely be palpated and then only in the standing position, but the diagnosis can be made from a careful study of the history and the clinical symptoms.

NOTES ON CASES OF SPRUE INVALIDED FROM THE TROPICS; WILL IT BECOME ENDEMIC HERE?[*]

H. B. HIATT, M.D.
HIGH POINT, N. C.

AND

W. ALLAN, M.D.
CHARLOTTE, N. C.

It has been shown by Price[1] that of the missionaries sent into tropical countries, a large percentage have to be invalided home; from India 46 per cent., from China 51.5 per cent., from Africa 79 per cent. The rate invalided home for sprue is available only from Central and Southern China, being 2.5 per cent. of those sent home from the former region and 4.5 per cent. from the latter. Harford,[2] a former physician to the Church Missionary Society (England), states that he regards bowel disorders as the most important cause of invaliding, and specifically mentions sprue as a common and serious cause.

To come nearer home, sprue is widely prevalent in Porto Rico,[3] which is being invaded at present by Americans in large numbers.[4] As people suffering with sprue are constantly returning to this country from the tropics, the profession will have to consider this disease both from a clinical and a public health point of view. Inasmuch as many eminent students[5] of tropical medicine consider sprue communicable and even infectious, it may very possibly become endemic in the Southern states. The comparatively recent introduction of pellagra into this country and its subsequent very rapid spread in the South, should be a warning to us to study our neighbors' diseases as well as our own.

The present observations are based on three cases of sprue from Porto Rico, two from China and one native case which was in all probability sprue; but, since the latter case passed from observation, it could not be studied at length. The clinical picture of sprue consists chiefly of gastro-intestinal symptoms — stomatitis, flatulence with great distention, diarrhea with large, pale, frothy, acid stools, atrophy of the intestinal mucous membrane with diminution in size of the liver and secondary anemia with loss of weight and strength; the course of the disease is chronic with a marked tendency to relapse.

The sprue stomatitis consists in a red, bald appearance of the tip and edges of the tongue, sometimes nearly all of it being involved. Aphthous ulcers are common. The edges and tip of the tongue become sensitive and the patient often complains of a burning, prickling sensation, even while the tongue is still apparently normal.

The diarrhea starts gradually; is of the early morning type until the case has progressed so far that bowel movements continue throughout the day. Straining and tenesmus are not common, but generally there is moderate pain and discomfort before stool and at other times from the passage of large amounts of gas along the bowel. The large gas production, combined with the atrophy of the intestinal wall and the thinning and weakening of the abdominal muscles, allow great distention, which is uniform over the whole abdomen and which remains constantly present.

The stools are the most characteristic part of the picture. Their bulk is great. The odor is very disagreeable. They may be watery or of the consistency of molasses, are putty-colored and have a strongly acid reaction. The fecal matter is intimately impregnated with fine bubbles of gas causing the stool to resemble ordinary apple-float very much in appearance, except for the color. Microscopically, the lack of fat digestion is striking; the numerous fat droplets may show a ring of varying thickness of fatty acid needles around the periphery, indicating that a slight amount of fat cleavage has taken place, but there seems to have been very little saponification. After the ingestion of meat, many meat fibers appear in the feces. Schmidt's hydrobilirubin test was very weakly positive in our cases.

The loss of flesh and strength may determine death from exhaustion. The blood shows a secondary anemia.

REPORTS OF CASES

CASE 1 (W. A. 616).—A white man, American, aged 25, single, teacher, was referred by Dr. W. A. Glines of San Juan, Porto Rico, in September, 1911. He had been in the island five years. Family and past history were unimportant. The present trouble started in 1909, as sore mouth and diarrhea, following grip and tonsillitis. His weight dropped from 145 pounds to 100 pounds, and he became so weak and emaciated that he returned to New York state in August, 1910. By March, 1911, he had improved somewhat, had gained 14 pounds and returned to Porto Rico.

Present condition shows weight 95 pounds, temperature 97, systolic blood-pressure 94 mm. Hg. Patient very weak, thin, anemic, with edema of the ankles and with harsh, dry skin. Physical examination negative. Blood shows severe secondary anemia; normal differential count; no plasmodia; urine normal; feces liquid, acid, frothy, composed largely of fats and fatty acids.

He had at various times been on buttermilk, meat, whole milk, no starch diets, etc., and for the past several months has been living on artificially soured whole milk. He complains of numbness of any part of the body on which he lies, from the scalp down, and of cramps of the extremities.

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[*] Read before the Section on Practice of Medicine at the Sixty-Fifth Annual Session of the American Medical Association, Atlantic City, N. J., June, 1914.

1. Price, G. B.: Brit. Med. Jour., Nov. 15, 1913, p. 1293.
2. Harford, C. F.: Brit. Med. Jour., Nov. 15, 1913, p. 1297.
3. Ashford, B. K.: Am. Jour. Trop. Dis., 1913, i, 146.
4. Census figures give 2303 in year 1910.
5. Manson, Bahr, Begg, etc.

and says he cannot think about anything except something to eat. Tongue is sensitive with a raw tip; abdominal distention great. One stool is passed at 2 a. m. always, from three to four before midday, and from two to three between midday and midnight. He sleeps from 9 p. m. to 2 a. m. but rarely after the 2 a. m. stool.

The patient was put to bed on a milk and grape diet. Sodium bicarbonate enemas were tried but found too exhausting. Several attempts to feed raw eggs convinced us that proteins were harmful at that time. After two weeks in bed he suddenly collapsed, developing an acidosis with air-hunger and acetonuria, and was thought to be dying. Alkali was given by rectum, and after the acidosis subsided enough milk and lactose lemonade were given to supply 1,000 calories daily. The abdominal distention and discomfort were so extreme that we determined to give monosaccharids instead of disaccharids. The only available monosaccharid at the time was glucose from the candy-maker's shop, so this was fed in lemonade, tea, grape-juice and milk. Later, almost raw liver and pancreas soups were added. The patient was discharged from the hospital in November and by February, 1912, had reached 127 pounds. There has been no return of the trouble since.

Case 2 (W. A. 1071).—A white, American woman, aged 42, married, housewife, came to us from Porto Rico in September, 1913. Family history was unimportant. The patient had lived in Porto Rico since 1909. She had had acute rheumatic fever at age of 12, followed by chorea, and later had quinsy; has had joint pains either with or without fever and swelling, severe enough to put her in bed, off and on, for the past thirty years, except when living in the far south, Key West, or San Juan. Present trouble began in February, 1911, with a feeling of fatigue and weakness. Within a month the diarrhea started. The gums and lips became sore in May, 1911, and she lost weight. She took six weeks' milk and rest cure and was well again by July. The second attack started in February, 1912, with laziness, sore tongue and gums and later diarrhea of the early morning type, starting at 2 a. m. and subsiding by noon. She reached twenty stools a day with such abdominal distention that she could not wear some of her clothes. She dragged along in and out of bed until March, 1913, when she became too weak to feed herself and weighed less than 100 pounds. She was out of bed again in June. Since January, 1913, she has taken nothing but milk, except for three weeks in July when she tried a meat diet but without benefit. In March, 1913, she took the yellow santonin treatment until she "saw yellow" and vomited; she was unable to take more than 1 grain every second day; she has taken occasional doses ever since. Present weight is 129 pounds, which is only 15 pounds below her normal weight. Every two hours she is taking a pint of milk up to four quarts a day. Physical examination negative except for the tonsils, which are large and matted down by adhesions from both pillars. Blood shows moderate secondary anemia, normal differential count, no plasmodia. Urine is negative. While the case was under observation, worry or fatigue would precipitate diarrhea with the typical acid, frothy, fatty stools; at other times the bowels were normal. At first the patient was put to bed on a milk and monosaccharid diet of grapes, honey and bananas. After a few weeks toast, baked apples and potatoes were added, and later cereals, eggs and cheese. By the middle of November she could be up all day, weighed 135 pounds, was taking solid food three or four times a day instead of milk eight times and her menstrual cycle, which had shortened to three weeks, again became normal. She was advised to visit in the United States until perfectly strong again, but intense homesickness with the difficulty in leading a regular life while visiting from place to place, soon counterbalanced the benefit of a northern latitude, and she returned to Porto Rico in March. The excitement of homecoming precipitated several days' diarrhea again.

Case 3 (H. B. H. 20).—A white woman, aged 32, married, housewife, who had never been out of North Carolina, was seen in July, 1913. Her father had died four years previously of pneumonia superimposed on chronic pellagra. Past history was unimportant. Present trouble started in February, 1913, with a diarrhea which at first consisted of from four to five stools daily, but which, in spite of medication, soon increased to ten or twelve stools daily. The diarrhea started about a month before expected confinement, which occurred several weeks early. An intense burning in the mouth and esophagus was present. She grew steadily worse, and when seen in July, had stomatitis, burning in the esophagus, extreme flatulence, and a diarrhea of from fourteen to twenty stools daily, beginning in the early morning and lasting throughout the day until about 6 p. m., after which she was not troubled until the next morning. The diarrhea was painless and the stools were of a pale yellow, or putty color, very frothy and expelled with a great accompaniment of gas; they had never contained blood. The patient had lost considerable flesh and was much weakened. Examination of chest and extremities was negative. The abdomen was tightly distended with gas, puffed out like a small balloon, and gave a doughy sensation on palpation. The superficial veins were dilated. No skin symptoms have ever been present. The blood showed hemoglobin 65 per cent., red cells 3,200,000; white cells 8,000; smear showed some poikilocytosis, red cells otherwise normal; no plasmodia. Sputum and urine were negative. Feces show a very offensive, voluminous, nearly white acid stool, frothy from the intimate admixture of fine gas bubbles. Microscopic examination showed no ova, no protozoa, many fat droplets and fatty acid crystals, with some splitting of the periphery of the fat droplets.

The patient was immediately sent to the mountains for the remainder of the hot season. At first, following a careful diet, the improvement was marked. As she improved, however, she became careless in diet and grew worse again. Becoming despondent over this she returned home and placed herself in the hands of my colleague, Dr. Duncan, who advises me that at present she is much improved, having gained greatly in weight and strength. He states that his treatment consisted of a diet of milk and fruits, and that the only medicine to which he could ascribe any beneficial results was iron, given over a long period.

Case 4 (H. B. H. 25).—A white woman, American, aged 38, married, housewife, was referred by Dr. J. T. Burrus of High Point in August, 1913. Family history was negative; past history negative until the patient went to Porto Rico as a missionary in 1904. Within a few months she contracted malaria, which proved so severe she was forced to return to the States. She continued to have one chill a month for a time but finally recovered entirely and returned to Porto Rico in 1906, where she remained until 1909. During these three years she enjoyed good health. The present illness began in May, 1912, three years after she had left the tropics. The first symptoms were slight diarrhea, from three to four stools daily, with some flatulence and stomatitis.

In spite of constant treatment the patient had grown steadily worse during the past eighteen months until, when seen, she weighed only 75 pounds. There was no subcutaneous fat; the dry, harsh skin was drawn tightly over the bony prominences. Mucous membranes were pale, skin muddy, eyeballs prominent from loss of orbital fat, hair lusterless, mouth and tongue the seat of subacute stomatitis. The pharynx and esophagus were not involved; chest and extremities negative; vision and reflexes normal. The abdomen was tensely distended, with thin walls and dilated superficial veins, everywhere tympanitic, and liver dulness obscured; doughy sensation on palpation. Pulse was 80, temperature 98, systolic blood-pressure 94 mm. Hg. Stools from eight to twelve daily, beginning between 12:30 a. m. and 2 a. m., and continuing until noon, with several in the late afternoon. At this time the patient was spending all of her time out of doors on a cot, or walking for short distances; in spite of this full exposure to sunlight there had never been any erythema on the exposed parts. Blood showed hemoglobin 60 per cent., red cells 3,000,000, white cells 4,600, normal differential count, no plasmodia. Urine was normal. Stools large, acid, frothy, putty-colored, no parasites, no occult blood, Schmidt test positive. Microscopically, undigested food, fat droplets, and fatty acid crystals made up the picture.

The patient was put on a milk and monosaccharid diet, without any medication, and a month later eggs, cereals, baked apples, potatoes, butter, and white meat added. She was permitted to go home under observation in September, and finally discharged in December. At this time she weighed 136 pounds, had a systolic blood-pressure of 119 mm. Hg, felt perfectly well and was having one or two stools a day.

In the treatment of sprue a great number of remedies have been recommended, such as potassium chlorate with morphin and bismuth,[6] powdered cuttlefish bone,[7] colloidal silver,[8] phenyl salicylate (salol), betanaphthol, mercuric chlorid, cyllin, izal (cresol preparations), acetozone and ipecacuanha.[9] A few years ago Begg[10] brought forward yellow santonin as a specific remedy, but Rogers, Manson and Castellani, working in India, have all failed to confirm Begg's results, and Ashford[11] working in Porto Rico, says, "Santonin, therefore, if it has any such specific action as that intimated by Begg, does not seem to be superior to a carefully supervised diet, especially a milk diet."

Rest in bed is obviously essential. The use of any drug as a specific is at present purely empirical. Moderate use of alkali seems rational. In severe cases the exclusive meat diet, or exclusive whole milk diet seems to us irrational. The fruit diet is simply a monosaccharid diet, and this in conjunction with skimmed milk seems to us to be the best diet to use in severe cases. The advent of cold weather, particularly cold nights, has apparently been of greater benefit to our patients than any other single factor. We know that the best treatment for pellagra is removal to the mountains during the hot months, and for the same reasons we think that in active cases of sprue the patients should not attempt to remain in the tide-water or piedmont regions during June, July or August.

Stuart,[12] Burnet,[13] Jackson[14] and others,[15] maintain that sprue and pellagra are the same disease, or in other words that sprue is "pellagra sine pellagra." While our experience with sprue is very limited, our experience with pellagra has been considerable, and we see no reason to confuse these two diseases. They have in common sore mouth, diarrhea, secondary anemia, loss of flesh and strength. Sprue has none of the nervous, skin, uterine, vaginal and rectal symptoms of pellagra, while pellagra is not characterized by the distention, and usually not by the early morning type of diarrhea found in sprue. The stools in the two diseases are totally different; the pellagra stool is large and liquid but composed of food remains hurried through the intestinal canal; the intimate admixture of fine bubbles of gas, the intense acidity and the characteristic picture of partially split fats are entirely wanting. We have elsewhere warned against the diagnosis of pellagra on the grounds of sore mouth and diarrhea.[16]

SUMMARY

Cases of sprue are constantly sifting back into this country and should be recognized and treated as such. Sprue should not be confused with pellagra. Rest in bed, a monosaccharid and skimmed milk diet and cold weather seem to be the most important factors in the treatment. Sprue may very possibly be or become endemic in the Southern states.

ABSTRACT OF DISCUSSION

Dr. Roger S. Morris, Clifton Springs, N. Y.: Did Drs. Hiatt and Allen make gastric analyses in their cases or not? The diarrhea which the patients had is described as a morning diarrhea, and it occurs to me that this may have been associated with conditions in the stomach.

Dr. H. B. Hiatt, High Point, N. C.: We made gastric analyses in all cases and nothing in particular was obtained from them. Sometimes we met achlorhydria and sometimes the conditions were normal. The morning diarrhea we considered to be the result of the low blood-pressure. The object of reporting the cases was to call attention to this subject and to utter a warning. If sprue should become endemic in the South its spread might be as rapid and the disease become as common as pellagra.

THE BLOOD IN ACIDOSIS FROM THE QUANTITATIVE POINT OF VIEW[*]

W. McKIM MARRIOTT, M.D.
ST. LOUIS

Although the elimination of acetone bodies, found in the urine in various conditions, has been thoroughly investigated, we still lack reliable information as to the extent to which these substances may accumulate in human blood and tissues during life. Diminished alkalinity of the blood, such as may occur in acidosis, is a condition unfavorable to diuresis, so that it is quite possible to have only a moderately high excretion of acetone bodies in the urine of a patient who may exhibit symptoms of severe acid intoxication. It is in such cases that an analysis of the blood should yield data of diagnostic and prognostic value.

By a method, which is described elsewhere,[1] it is possible to determine acetone, aceto-acetic acid and beta-oxybutyric acid in small amounts of blood drawn directly from a vein. From 2 c.c. to 5 c.c. of blood is sufficient, and the analysis may be carried out in about the same time as is required for an analysis of the urine for the same constituents. When analyzed according to this method, normal blood from man, dog, pig and beef is found to contain less than 1.5 mg. of gross aceto-acetic acid (acetone preformed, plus aceto-acetic acid), and less than 4 mg. of oxybutyric acid per 100 gm. of blood, all results being expressed in terms of acetone.

A number of pathologic conditions associated with acidosis have been studied, including light and severe diabetes, febrile conditions of childhood, postoperative acidosis and experimental phloridzin and pancreatic diabetes in dogs. In all these conditions the acetone bodies were present in the blood in excess of the normal. The highest figures obtained were from the blood of a patient with severe diabetes at a time when he exhibited signs of impending coma. In this instance, the oxybutyric acid amounted to 45.2 mg. per 100 gm. and the gross aceto-acetic acid to 28.0 mg., both calculated in terms of acetone.

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[6] McDonald, W. C. C.: Australasian Med. Gaz., June, 1911.

[7] Cantlie, J.: Brit. Med. Jour., Nov. 15, 1913, p. 1296.

[8] Manson, Sir P.: Tropical Diseases, New York, William Wood & Co., 1908, p. 477.

[9] Rogers, L.: Dysenteries, Oxford Univ. Press, 1913, p. 320.

[10] Begg, C.: Sprue, New York, William Wood & Co., 1912.

[11] Ashford, B. K.: Am. Jour. Trop. Dis., 1913, i, 146.

[12] Stuart, C. E.: Abstr., Jour. Trop. Med., 1913, xvi, 287.

[13] Burnet, J.: Are Pellagra and Sprue One and the Same Disease? Abstr., The Journal A. M. A., Sept. 16, 1911, p. 1014.

[14] Jackson, T. W.: Tropical Medicine.

[15] Tyson and Fussell: Practice of Medicine, p. 1164.

[16] Allan, W.: New York Med. Jour., Dec. 18, 1909.

[*] Read before the Section on Pathology and Physiology at the Sixty-Fifth Annual Session of the American Medical Association, Atlantic City, N. J., June, 1914.

[1] Marriott: Jour. Biol. Chem., August, 1914.

The accumulation of the acetone substances in the blood and the excretion of these substances in the urine did not always run parallel. Administration of alkali resulted in considerable alteration in the relative distribution of the acetone substances between the blood and the urine, the effect being to diminish very considerably the concentration of these substances in the blood, without at the same time bringing about any appreciable change in the total daily output in the urine.

Analyses of the blood for preformed acetone indicated that this substance may amount to more than 60 per cent. of the gross aceto-acetic acid, in conditions of severe diabetes. With alkali therapy, preformed acetone showed a relative diminution. That is to say, the alkali appeared to decrease the decomposition of aceto-acetic acid.

In the bloods examined the ratio of oxybutyric acid to total acetone substances ("beta ratio" or Kennaway, Pembrey and Poulton) varied from 50 per cent. to 80 per cent. The significance of this ratio is not, as yet, entirely apparent. It is possible that a high ratio may be an indication of partial asphyxia; for we know from the work of Embden, Friedmann, and Dakin and their collaborators that, with diminished oxygen supply, various organs of the body readily effect the reduction of aceto-acetic acid to oxybutyric acid, whereas the reverse change is favored by the presence of an abundance of oxygen.

So far I have spoken only of the accumulation of the acetone substances in the blood, and have said nothing of the tissues. The blood, however, appears to be a fairly satisfactory index of the extent to which acetone substances may accumulate in the tissues. For example, it was found that the blood and liver of a starved phloridzinized dog contained the same amounts of acetone bodies per 100 gm. and the muscles approximately one-half as much. The beta ratio, however, was higher in the muscles and liver than in the blood, and this would, of course, be expected as there would be relatively less oxygen in these organs than in blood.

It is not intended here to present a detailed discussion of acidosis but merely to indicate some applications of a method which I believe to be capable of throwing light on the subject of acetone body acidosis.

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ABSTRACT OF DISCUSSION

Prof. A. J. Carlson, Chicago: I should like to ask Dr. Marriott for the findings in the pancreatic diabetes in dogs. It has been my experience in this experimental diabetes that there is not in the urine or in the breath of these dogs the characteristic acetone odor that is found in advanced cases of human diabetes. Was there any indication of increase of acetone in the experimental dogs comparable to that in cases of human diabetes?

Dr. W. McKim Marriott, St. Louis: I was surprised to find that in pancreatic diabetes in the dog there was only the very slightest increase in acetone bodies, nothing at all comparable to that of human diabetes or even of phloridzin diabetes in the dog; the figures were just above the normal.

DIPHTHERIA OF THE SKIN OF UNUSUAL TYPES

REPORT OF TWO CASES *

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Diphtheria of the skin was first recognized by Chomel[1] in 1759, and by Samuel Bard[1] in an epidemic in New York in 1771. Although the diphtheria bacillus was not discovered until 1883 by Klebs[1] and 1884 by Loeffler[1] of Greifswald, working independently, as early as 1830 Trousseau[1] wrote extensively of cutaneous diphtheria. It was not, however, until 1891 that the integumentary outbreak of this affection was studied not only clinically but also bacteriologically by Neisser.[2]

The invasion of the skin by the Klebs-Loeffler bacillus is of infrequent occurrence, as shown by the report of the St. Anne's Children's Hospital of Vienna.[2] From 1894 to 1902, out of 2,217 clinical and bacteriologic cases of diphtheria the cutaneous surface was attacked in but twenty-three instances, and the most of these were of the false-membrane type. Mallory[1] has found in a series of 251 cases of diphtheria that the skin was attacked in but one instance and the lesion was then of the false-membrane type.

Trousseau's original contention that cutaneous diphtheria was preceded by some tissue loss, no matter how slight, is the view held by the present-day investigators, notwithstanding Daviot's[3] view to the contrary.

The bacillus gains entrance to the skin through some opening, in cracks, slight excoriations, erosions resulting from herpes, in the breaks in the continuity of the skin secondary to an eczema, an intertrigo or an impetigo, etc. Cutaneous diphtheria may be of primary occurrence and limited to the integument; the infection may be conveyed to the larynx, throat or nasal mucous membrane, or, as is usually the case, the skin is secondarily involved, the mucous membranes, just mentioned, showing the original lesions.

Inoculation of the skin with the Klebs-Loeffler bacillus occurs in one of three ways: by auto-inoculation, by means of some article of clothing, utensils, etc., containing the same, and from one person to another by close contact, as by kissing, coughing, circumcision, etc.

Numerous varieties of lesions have been reported in which the diphtheria bacillus has been found. The most frequent of these is the false-membrane type. The other types which have been recorded are the ulcerative, gangrenous, eczema-like, impetiginous eczema-like, pustular and impetigo-like, ecthymatous, vesicular and varicella-like, bullous, dermatitis herpetiformis-like, carbuncular-like, and the tumor and abscess.

False-Membrane Type.—The older writers on diphtheria of the skin affirmed that every case had a diagnostic false membrane. The break in the continuity of the skin attacked by the bacillus would become painful, puff up, there would be a profuse fetid discharge, a false membrane would form and the edge of the patch would become elevated and the bottom ulcerated. Not infrequently an attack of erysipelas would develop around the diphtheritic patch. It was not rare, however, to observe an attenuated form that consisted of grayish plaques, more dry than moist, discrete and slightly spreading. These plaques are detached in from about eight to ten days, some persisting for a longer period.

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* Read before the Section on Dermatology at the Sixty-Fifth Annual Session of the American Medical Association, Atlantic City, N. J., June, 1914.

[1] Quoted by Nuttall, G. H. F., and Graham-Smith, G. S.: The Bacteriology of Diphtheria, New York, G. P. Putnam's Sons, 1908.

[2] Quoted by Marschalko: Arch. f. Dermat. u. Syph., 1909, xciv, 379.

[3] Quoted by Jack: Brit. Jour. Child. Dis., 1913, x, 456.

Bernard and Jacob[1] found diphtheria bacilli in gray ulcerating patches on the thigh of a soldier. Bolton and Brewer[1] cultivated the organism from a sore, showing a black central scab surrounded by sloughing portions of dirty white skin, on the groin of a girl. Williams[1] isolated virulent diphtheria bacilli from a membrane on the finger and from the throat of the same patient. Other instances are too numerous to mention.

Wound Diphtheria.—Wound diphtheria, so-called, is of fairly common occurrence, developing either secondary to nasal, throat or laryngeal diphtheria of the afflicted person or from some one else with the disease. Several instances of cutaneous diphtheria have occurred in insignificant wounds (Park,[1] Pitts[1] and others). Tavel[1] mentioned a case of infection in the operation for spina ventosa; Bruner,[1] three cases of wound infection, in one of which virulent, and in the other two non-virulent, diphtheria bacilli were found; Sponck,[1] three examples of infection of tracheotomy wounds. Treitch and Abel[1] (quoted by Flexner) and Scheller[1] also mentioned examples of wound infection. Further instances of this type of affection have been cited by Paterson,[4] and Abel[2] of the finger; Sowade,[5] of the right deltoid; Place,[6] on and surrounding the vulva; Gerloczy[2] found the infection in the left inguinal region and Schwab,[2] in the genital region.

Ulcerative Type.—Although most of the cases of this variety have developed false membranes, there have been some exceptions. Jack[7] had a patient, the mother of a child with nasal diphtheria, who developed at the site of a trauma above her left elbow a red spot which ulcerated. The diphtheria organism was found in this lesion. Heelis and Jacob[3] found diphtheria bacilli in an ulcer on the dorsum of the right hand. The latter infected the outer canthus and from this the disease spread to the conjunctiva. Kanthack and White[1] found the bacillus in phagedenic ulcers of the neck.

Gangrenous Type.—Gangrene of the skin has been reported by Bolton,[8] Dawson[9] and Marschalko[10] by the implanting of the diphtheria bacillus. Pernet[11] had an infant with gangrenous lesions on the side of the anus. The little patient developed difficulty in deglutition and finally died of paralysis of the diaphragm. Virulent diphtheria bacilli have been found by Steffens[1] in a case of gangrene of the eyelid. Freymuth and Petruschnky[12] have found the Klebs-Loeffler bacillus in cases of noma.

Eczema-Like Type.—Richard[11] had a young girl with a patch of eczema for some years below the left ear, which spread and attacked the commissure of the left lip. The bacillus of Loeffler was found. Her sister developed a typical case of diphtheria. Glucksmann[1] found the diphtheria bacillus in five cases with an eczema-like outbreak. Baginsky[2] has reported cases of cutaneous diphtheria developing on patches of eczema.

Tumor and Abscess Types.—Müller[13] described the cases of two children, a brother and sister. The girl had a tumor on the left labium majus extending to the inguinal region; there was also throat diphtheria present. The brother also developed diphtheria of the throat and a swelling at the root of the nose. Both children died and microscopic examination showed numerous diphtheria bacilli in the tumors. Deutschlander[14] has collected reports of forty-eight similar diphtheritic tumors from the literature.

Hála[1] found virulent diphtheria bacilli in an abscess of the eyelid. Councilman, Mallory and Pearce[1] found diphtheria by culture in four out of ten cases of cervical abscesses developing in the course of diphtheria. Schottmüller[1] isolated non-virulent diphtheria bacilli from the pus of an inguinal abscess and from the throat of a boy suffering with diphtheria. Tavel[1] has found the Klebs-Loeffler bacillus in abscesses. Leary discovered the diphtheria bacillus in an abscess which developed about a hair-follicle two days after a necropsy in a case of diphtheria.

Unclassified Types.—Bokay[2] has recorded instances of skin diphtheria and diphtheritic balanitis and vulvitis. G. C. Garratt[3] has written on acute diphtheritic whitlow. Heelis and Jacob[3] found the diphtheria bacillus in broken chilblains in children associated with faucial diphtheria.

Pitts[1] recorded an instance of diphtheria of the umbilicus in a child 4 days old, and Caddy,[1] a case of diphtheria of the nipple and areola of a woman suckling an infant, which shortly afterward developed diphtheria.

Wright[1] found the Klebs-Loeffler bacillus in a case of anal fistula.

Impetiginous Eczema-Like, Impetiginous, Ecthymatous, Pustular, Vesicular and Bullous Types.—These vesicular, bullous, pustular and crusted types constitute varieties of diphtheria of the skin which have only recently been recognized as such and are of rare occurrence. In all intractable cases in which these lesions are present, careful cultural tests should be carried out.

Todd[15] recorded the occurrence of six cases, out of fifty-one of external rhinitis due to the Klebs-Loeffler bacillus, in which secondary pustules developed on the skin. These pustules when examined at an early stage contained the diphtheria bacillus.

Slater[16] reported a case in a girl of 13 with a large number of vesicles, resembling varicella, some of a crescentic arrangement and with a profuse discharge. The condition had lasted for three years. The diphtheria bacillus was isolated from cultures. Antitoxin cured the patient.

Dawson[9] recorded a case in a man of 58 who showed groups of bullae on an erythematous base, resembling dermatitis herpetiformis, from which virulent diphtheria bacilli were recovered.

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4. Paterson: Med. Times and Gaz., 1866, ii, 608.
5. Sowade: Arch. f. Dermat. u. Syph., 1912, cxiii, 1039.
6. Place: Boston Med. and Surg. Jour., 1910, ii, 730.
7. Jack: Brit. Jour. Child. Dis., 1913, x, 456.
8. Quoted by Dawson: Brit. Med. Jour., 1910, ii, 859.
9. Dawson: Brit. Med. Jour., 1910, ii, 859.
10. Marschalko: Arch. f. Dermat. u. Syph., 1909, xciv, 379.
11. Quoted by De Verbizier: Ann. de dermat. et de syph., 1912, p. 82.
12. Quoted by Kautlack, following Todd's article (Lancet, London, 1898, i, 1458).
13. Müller: Deutsch. Arch. f. klin. Med., March 1, 1913.
14. Quoted by Müller (Footnote 13).
15. Todd: Lancet, London, 1898, i, 1458.
16. Slater: Lancet, London, 1908, i, 15.

Place states that he has had cases in which impetigo-like lesions developed on the face and the hands, in which diphtheria bacilli were found, associated with diphtheria of the respiratory tract.

Labbé and Demarque[11] recorded an instance of disseminated impetiginous eruption in a child of 4, accompanied by several sharply marginated ulcers. The Klebs-Loeffler bacillus was present. They also reported a second case, in a child of 2½, with diphtheritic impetigo-like lesions on the face and the scalp and excoriations on the lips.

Goodall and Washbourn[3] have cited instances with diphtheritic pustules yielding thin pus and producing ulcers, slow to heal and often free from membrane.

Eddowes and Hare[17] recorded a bullous and pustular case in a girl of 11. The lesions were found on the arms, the hands, the lips, and one lesion on the left anterior pillar of the fauces. There was no false membrane present. Klebs-Loeffler bacilli were found. They reported another case, in a woman of 41, of three years' duration, with lesions of an impetiginous aspect.

Douglas Heath[11] observed a somewhat generalized diphtheritic eruption of an impetiginous type.

Brandal, Herley and S. Edin[11] recorded a lesion of a pustular carbuncular type in which they found the diphtheria bacillus.

Jéz[1] found virulent diphtheria bacilli in the fluid from the vesicles of herpes labialis in a patient suffering with diphtheria. Dávelos[1] discovered the organism in the fluid of impetiginous lesions covering the face and the neck of a baby.

Prescott[1] reported a case of a child in which a blister was raised by the application of a plaster, a false membrane formed and the diphtheria bacillus was found; no bacilli were found in the nose and the throat although the child had recently recovered from diphtheria.

Waelsh[1] described diphtheria-like bacilli, pathogenic for rabbits and guinea-pigs, in a pustular eruption of the skin of the trunk. Müller found diphtheria bacilli in a pustule on the nates.

Schucht[2] recorded an instance of infantile ecthyma, with sharply marginated ulcers, and a purulent discharge from the ear, in a child of 3, in which the organism was found.

Verbizier[18] cites ten cases, in which nine did not have the membrane or other usual manifestations of diphtheria. All but two of the cases occurred in infants. Four of the cases ended fatally. Seven among those recorded were of the impetiginous eczema type, and in three, vesicles and bullae gave rise to an abundant discharge. Four showed a grave conjunctivitis. The most common form, and, therefore, the most typical type observed in infants, had the appearance of an impetiginous eczema, affecting almost always the head and the face, and associated with a grave conjunctivitis, sometimes also an otorrhea and rhinitis, the whole forming a distinct clinical entity.

The two following cases were first seen by us Sept. 5, 1913.

Case 1.— Lillian J. W., aged 4 years, had always been healthy and well nourished, and is plump and well built. Three days before she came under observation the outbreak appeared on the body, with an accompanying sore throat. There were observed on the trunk, the extremities and the buttocks two dozen pustular and bullous lesions varying from a pea to a pigeon's egg in size. The lesions were discrete and of a whitish-yellow to an orange-yellow color. The large bullous lesions had an inflammatory areola, and on rupture were found to be multilocular and filled with a thick, cheese-like, yellow pus. The throat was swollen, the glands of the neck enlarged, the patient restless and there was a high temperature. Examination showed membranous, white patches on both tonsils. Cultures were made from an unruptured lesion on the lower abdomen and also from the throat. Diphtheria bacilli were obtained from each location, the one of Type D and the other of Type C, according to Wesbrook's classification. Staphylococci were also found in the cultures. The patient was given 3,000 units of antitoxin and was sent to the Municipal Hospital. Death ensued two days later.

Case 2.—Mary W., sister of Patient 1, aged 8 years, who had been unusually free from sickness, developed, the day previous to our visit, sore throat and an eruption on the skin. The right tonsil was covered by a white membrane. The temperature was moderately high. Scattered over the trunk and the extremities were about a dozen lesions, mostly pea in size but a few with the proportions of a hazelnut. They were of the same character as her sister's; the inflammatory areola, however, was less marked and the contents were of a thinner consistency. Cultures were made from the tonsil and from an unruptured lesion on the leg. Diphtheria bacilli were found in each, corresponding to the C type of Wesbrook. Staphylococci were also found. The patient was given 1,250 units of antitoxin and was transferred to the Municipal Hospital. Although the little patient developed scarlet fever while in the hospital, she finally recovered.

The Klebs-Loeffler bacillus varies considerably in regard to its virulence both in the patients attacked and in the animal experiments. Abel, Neisser and Marschalko obtained positive results in their animal inoculations. The diphtheria bacillus obtained from Slater's case killed the guinea-pig. A pure culture of the Klebs-Loeffler bacillus obtained from Leary's case was inoculated into a guinea-pig and killed the animal in forty-eight hours. Eddowes and Hare inoculated 2 cm. of the serum suspension of the culture of the Klebs-Loeffler bacillus found in their case into a guinea-pig, and death occurred in twenty-seven hours. The organism was recovered from the guinea-pig.

Extensive cultural experiments made by numerous investigators demonstrated the fact that other pathogenic organisms are almost invariably associated on serum cultures with the diphtheria bacillus; although the streptococci are the most frequently associated, pyogenic cocci, staphylococci and pneumococci may also be found. Eddowes and Hare found in their case the *Staphylococcus aureus* and streptococci associated with the diphtheria bacilli. We found staphylococci in addition to the diphtheria bacilli in our cases.

DIFFERENTIATION OF THE DIPHTHERIA BACILLUS AND THE PSEUDODIPHTHERIA BACILLUS (BACILLUS OF HOFMANN)

In an unusual type of lesion in which a diphtheria-like bacillus is found it is always essential to distinguish the true diphtheria bacillus, or the Klebs-Loeffler bacillus, from the pseudodiphtheria bacillus, or the bacillus of Hofmann.

The pseudodiphtheria bacillus is generally much shorter than the common forms of the diphtheria bacillus; it usually is a short, straight, oval bacillus, with rounded ends, and one median, lightly stained transverse septum. The former in proportion to its length is much broader than the latter, and the widest part, which is about equal to one-eighth of the length, is at the middle. Some of the forms of the Hofmann's bacillus are clubbed and often slightly curved but take the stain more deeply than the diphtheria bacillus. Sometimes after forty-eight hours' growth on the culture-medium the bacilli are even shorter than at an earlier period.

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[17] Eddowes and Hare: Lancet, London, 1908, i, 282.

[18] Verbizier: Ann. de dermat. et de syph., 1912, p. 82.

Metachromatic granules (polar bodies) are rarely found in any of the forms. In young cultures of Hofmann's bacillus, in those thirty-six hours or older, polar bodies are occasionally found, especially in the larger forms, but they are seldom so sharply defined as in diphtheria bacilli and are frequently ovoid and elongated. In Klebs-Loeffler bacilli, according to Denny,[1] polar granules are first seen as very minute objects after eight hours' growth, but do not become abundant until cultures have been growing for fifteen hours. They are found most frequently produced in cultures incubated at from about 34 to 36 C. (93.2 to 96.8 F.). Clubbing and segmentation are marked features.

Neisser's special stain should be used in the demonstration of these granules.

NEISSER'S SPECIAL STAIN[1]

Solution 1:	
Methylene blue (Grubler), 1 gm., dissolved in alcohol (96 per cent.)	20 c.c.
Distilled water	950 c.c.
Glacial acetic acid	50 c.c.
Solution 2:	
Bismark brown	2 gm.
Boiling distilled water	1,000 c.c.

Solution 1 is used for from one to three seconds and solution 2 for from three to five seconds. The polar bodies are stained dark blue and the protoplasm brown.

Hofmann's bacillus begins to develop at a lower temperature (18 C. or 64.4 F.) than the diphtheria bacillus and the growth is more luxuriant. The former shows a whiter, softer, larger, and usually flatter growth than the latter on Loeffler's serum. The growth being more rapid, the colonies attaining considerable dimensions in the first twenty-four to forty-eight hours.

Hofmann's bacillus also shows a larger and whiter growth on alkaline serum; is more abundant on nutrient agar and glycerin-agar; shows a larger growth both on the surface and along the needle-tract in stab-cultures, more abundant on gelatin; on broth causes an earlier diffuse clouding of the medium and a greater alkalinity (acid is never produced); in glucose broth neither gas nor acid is produced, and there is an increase in the alkalinity; it does not produce acid even after prolonged growth in broth or Hiss' medium containing glucose, lactose, maltose, galactose, saccharose, levulose, dextrin, mannite or glycerin.

The diphtheria bacillus, in cultures from 36 to 48 hours old, shows the polar bodies much enlarged and occupying a large part of the club-like dilatations of the organisms; the polar bodies appear to be increased in number as well as in size, so that several are found in each bacillus.

The diphtheria bacillus in broth splits the meat-sugar contained in ordinary broth, producing acid, and thus changes the reaction of the medium, making it less alkaline, or even slightly acid. Roux and Yersin were the first to demonstrate these changes.

In glucose broth the diphtheria bacillus makes the culture-medium acid. This phenomenon was observed with glucose (dextrose), galactose, levulose and glycerin.

Lubowsky[1] suggested the differentiation of the two organisms by an immunization of animals with the non-virulent bacilli and tested the agglutinating properties of their serum to the diphtheria bacillus and Hofmann's bacillus, the former alone causing agglutination.

As a last resort in differentiating the two organisms, animal inoculation may be carried out, the diphtheria bacillus causing the death of a guinea-pig within from one to four days, while the bacillus of Hofmann proves innocuous.

CLASSIFICATION OF DIPHTHERIA BACILLI

Diphtheria bacilli have been classified in various ways. The one followed in the laboratories of the Philadelphia Board of Health was devised by Wesbrook.

Wesbrook, Wilson and McDaniel[1] classify the organism according to its morphologic types, three main groups being used.

Group 1, Granular Forms: There are distinct spherical, ovoid or markedly rounded granules present. They label the forms from A to G. In each variety, excepting B, the granules show metachromatism. The granules are fairly uniformly found at one or both poles of the bacilli. The protoplasm not included in the granules stains with a much less intensity than the latter bodies.

Group 2, Barred Forms: These are distinguished by their irregularity of staining; bacilli present a distinct barred appearance as if segments of protoplasm had been actually removed. The darkly stained portions vary considerably in staining reaction both in different bacilli of the same variety and even in the individual bacillus. They vary in size and shape; metachromatism is not suggested. The number of dark segments varies from three to nine. Types A[1] to G.[2]

Group 3, Solid Color Forms: The organisms are of a solid or uniformly staining shape and size, and also some have the appearance of diplococci. Types A[2] to G.[2]

In the cases which we have reported above, Type C was present in one and Types C and D in the other. In other words, the organisms corresponded to Group 1, the granular form; Type C is of a curved shape, in which the protoplasm stains lightly excepting at the poles and occasionally at one point between the poles, where rounded, rarely ellipsoid metachromatic granules occur. This is the most common form encountered in the clinical cases. Type D is similar in most respects to C, but shorter, thicker and apparently straighter; the former is from 0.75 to 1 micron in thickness and from 2 to 3 microns in length, showing metachromatic granules at both poles and none in the center, and the latter is from 3 to 6 microns in length and from 0.5 to 1 micron in thickness, with both central as well as polar metachromatic granules.

CONTAGIOUSNESS OF DIPHTHERIA

It is extremely important to recognize diphtheria of the skin because of its contagiousness. Loeffler[1] found that bacilli from cultures dried on silk threads were viable for from three to four weeks; from small dried pieces of membrane he was able to obtain living bacilli in large numbers at the end of from four to nine weeks, and isolated colonies after thirteen to sixteen weeks; after sixteen weeks they could never be cultivated. From membrane dried on pieces of linen and kept in the dark at room temperature, Roux and Yersin[1] were able to obtain numerous colonies at the end of three and four months. Abel[1] demonstrated living bacilli on a toy six months after the child was infected. The latter also has found bacilli sixty-five days after the disappearance of the membrane. Diphtheria bacilli have been found on pillows and bedclothes (W. H. Park[1]), on a sweeping-broom (Wright and Emerson[1]), on a drinking-glass in common use (Forbes[1]), and on a sucking-bottle (Weichard[1]).

SUMMARY

Diphtheria of the skin may occur in several forms, in addition to the false-membrane type, the ulcerative, gangrenous, eczematous, impetiginous eczema-like, pustular, impetiginous, ecthymatous, vesicular (varicella-like), bullous, dermatitis herpetiformis-like, tumors and abscesses. Our two cases were of the bullous impetigo type, one terminating fatally.

Inoculation of the skin occurs by auto-inoculation, by means of infected articles, and from one person to another. It may occur primarily on the integument, remain limited to it, spread to the mucous membranes, or, more commonly, is secondary to throat, nasal or laryngeal diphtheria.

In cases of diphtheria of the skin the Klebs-Loeffler bacillus always has to be distinguished from the pseudodiphtheria bacillus (Hofmann's bacillus).

These two organisms differ somewhat morphologically, culturally and in animal inoculations. The diphtheria bacillus is particularly distinguished by the metachromatic granules (polar bodies), as shown best with the Neisser stain, by the acid-producing qualities, and by the fatal results on inoculating animals.

Diphtheria bacilli are grouped according to the Wesbrook, Wilson and McDaniel classification.

These diphtheritic skin-lesions are a constant source of contagion, because they are frequently unrecognized for a considerable period. They may last over a long period or run a rapidly fatal course.

We wish to express our thanks to Dr. C. Y. White for assistance in the bacteriologic study and to acknowledge our indebtedness to the excellent chapters of G. S. Graham-Smith, in "The Bacteriology of Diphtheria," by G. H. F. Nuttall and G. S. Graham-Smith.

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ABSTRACT OF DISCUSSION

Dr. Henry C. Baum, Syracuse: In a case bearing on this subject, the patient, a boy 11 years old, was admitted to our orthopedic ward with a discharging sinus of the hip-joint, near which were a number of vesicles and vesicopustules. When my attention was called to the case, a few days after admission, there was some elevation of temperature, and a culture made from the contents of the vesicles showed the Klebs-Loeffler bacillus. Throat cultures were negative, but we learned that the boy had been taking care of his little brother, who was suffering from laryngeal diphtheria. A number of cases of diphtheria subsequently developed among the children in the orthopedic ward. I have never made a search of the literature with regard to this subject, but have no doubt that diphtheria of the skin is of more frequent occurrence than is generally supposed, and probably some of us have overlooked such cases in the past.

Dr. Martin F. Engman, St. Louis: The subject of diphtheria of the skin is very important when one considers the number of cases that probably occur after diphtheria. Not only immediately, but possibly some little time after an attack of diphtheria the patient is probably a diphtheria bacillus carrier, and various methods have been devised to destroy the local foci in these carriers. I have seen several cases of impetigo-like and eczema-like eruptions after diphtheria in which the bacilli were found in the skin lesions. Some years, ago possibly ten, a very sad case came under my observation. A child had recovered from diphtheria and shortly afterwards developed an aural discharge, with some eruption about the ear. A child played with this patient, was stricken with diphtheria and died. The discharge from the eruption about the ear was then examined, and was found to contain the Klebs-Loeffler bacilli. These eruptions are observed not only after diphtheria, but also after many catarrhal conditions of the nose and throat, and after measles and grip, and it is well to examine bacteriologically any eruption about the mouth or ears. This bacillus varies so widely in its morphology and virulence, that the subject is really important from many points of view.

Dr. M. Haase, Memphis: What was the duration of the skin lesions in the two cases reported? If they occurred immediately after an attack of diphtheria, it was not surprising to find the bacilli in the skin eruption.

Dr. A. Ravogli, Cincinnati: Before the introduction of Behring's antitoxin, I frequently saw cases of diphtheria eruption of the skin, especially about the lips and mouth, and sometimes near the genitals, but since the use of antitoxin I do not recall a single case of this kind. In the cases I formerly saw we used Monsell's solution with excellent results.

Dr. H. N. Cole, Cleveland: Drs. Knowles and Frescoln justly laid much stress on the presence of the pseudo-diphtheria bacillus in a number of cases. In a series of several hundred routine cultures in cases of eczema, impetigo and dermatitis of the skin, this organism was encountered a number of times and it is very important to differentiate it from the diphtheria bacillus. The Neisser stain is the only one by which the distinction can be made.

Dr. Leonard D. Frescoln, Philadelphia: The cultures from the throat and from the skin were practically identical and one could not tell which was which. In connection with this subject of properly diagnosing possible infective lesions of the skin, three classes of skin infections should be kept in mind: First, those due to the Klebs-Loeffler bacillus; second, chancroidal infections in various parts of the body, and, third, deep ring-worm lesions. The possibility of a patient being a diphtheria carrier should not be lost sight of. In one case that came under my observation, the patient, a hospital nurse, made some complaint of her nose, and with the postnasal mirror a patch of diphtheritic membrane, typical in appearance and containing Klebs-Loeffler bacilli, was found. That nurse was certainly a diphtheria carrier.

Dr. Frank Crozer Knowles, Philadelphia: In one of the two cases we reported, the lesions had been present for four or five days before the patient came under our observation and in the other case only one day. We recently had an interesting pseudodiphtheria case at the Pennsylvania Hospital. The patient had an eczematous eruption on the back of the neck and shoulders, and on taking a culture, we found a pseudodiphtheria bacillus. An autogenous vaccine was made and injected and the patient recovered within a week.

Price of Radium.—According to Thomas Stephenson (*The Prescriber*, July, 1914), the price of radium, which has recently stood at about £20 (about $100) per milligram, has shown signs of being reduced. Stephenson states that he was informed on good authority quite recently that radium salts could be obtained at £13 (about $65) per milligram, but the strength of these is not stated. As the value of radium salts depends on the amount of the element radium they contain, the price must be reckoned not only on the degree of purity of the salt but also on the combining weight of the element with which the radium is combined. Thus pure radium bromid is worth less per milligram than pure radium chlorid because the bromid contains a smaller percentage of radium because of the greater atomic weight of bromin as compared with chlorin.

LEAD-POISONING WITH PARALYSIS OF THE EXTERNAL OCULAR MUSCLES

EDWARD MERCUR WILLIAMS, M.D.
SIOUX CITY, IOWA

Paralysis of the extra-ocular muscles is a condition very rare in lead-poisoning. I recall seeing it in only one other case, that of a male attendant at the East Oklahoma Hospital for the Insane. He had to give up his work as a painter several years previously on account of his illness. When I examined him he had, as residual signs of the disease, a partial double wrist-drop and bilateral ptosis, more complete on one side, on which side also the internal rectus muscle was partially paralyzed, sufficiently so to interfere with his accommodation.

In the present case in addition to the paralysis of the right external rectus there were unusually widespread and intense atrophic muscle-changes and absence of basophilic degeneration and of the characteristic lead-line on the gums.

While the external rectus was only partially paralyzed, the paralysis was sufficient to cause double vision when the patient worked in a poor light. I have had several patients with slight or partial ocular paralysis in whom the double vision occurred only in dim light. I have never seen this referred to. Possibly it is due to the extra impulses necessary to accommodation in a poor light, causing a proportional overworking of the healthier muscles.

The usual symptoms of lead-poisoning are so well known and have been so ably described by a recent writer[1] that their repetition is hardly necessary. It might be well, however, to emphasize the fact that insidious cases of plumbism may go for a long period unobserved. Particularly when the occupation and life of the patient is of such character (as in this case) as to necessitate very little muscular exertion.

History.—Woman, single, aged 36, typesetter for last six or eight years, has not had any abdominal pain since an acute attack of doubtful character two years ago. Also she did not notice any weakness of her muscles until the present acute attack, beginning three weeks before the examination. She then complained of rheumatism, had severe pains in all her limbs, and her leg- and arm-muscles became weak. These increased until she became bedfast in a couple of weeks.

Examination.—Pupils were equal, regular in outline and reacted promptly to light and accommodation. The right abducens was very weak and the patient said that she had often noticed double vision when working in a poor light. At time of examination she had double vision on being tested in extreme lateral field. Almost all the muscles of the body seemed weak and wasted. Fibrillary tremors were present in the thigh- and shoulder-muscles. The arms were both very weak, the right more than the left. The forearm extensors were completely paralyzed on the right, but on the left the patient retained the power of extending the index-fingers and little fingers. The supinator longus was slightly impaired on the right. The right upper arm, biceps, triceps and shoulder-muscles were paralyzed. Reflexes were absent on right and very weak on the left. The left upper arm- and shoulder-muscles, while decidedly atrophied, still retained some power. The forearm flexor groups on each side were only slightly affected. Both legs were very weak, the patient being able to bear her weight with great difficulty and only when assisted. She could not rise from a sitting posture. There was double toe-drop and the atrophy of the leg-muscles, with the exception of the greater involvement of the foot extensors, seemed to affect all the musculature about equally. Reflexes present, but greatly diminished; no Babinski; no sensory changes nor tenderness of the nerve-trunks.

The blood examination did not show any basophilic degeneration.

The characteristic blue line on the gums was not present, though there was a peculiar blackish discoloration of the lower decayed portion of one or two of the teeth.

The patient's mental condition showed some deterioration.

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[1] Linenthal, Harry: The Early Diagnosis of Lead-Poisoning, The Journal A. M. A., June 6, 1914, p. 1796.

FOREIGN BODY IN THE SUBMAXILLARY GLAND

William H. Smith, M.D., and Norman T. Kirk, M.D.,
Captain and First Lieutenant, Respectively, Medical Corps, United States Army
Washington, D. C.

W. C. C., a soldier of the Twenty-Second Infantry, was on a maneuver problem near Texas City, Tex., Sept. 11, 1913. He plucked a piece of grass from along the roadside and put it in his mouth. A small piece of the grass, about ¾ inch long, consisting of the bearded seed-tufts, got under his tongue and entered the orifice of the left Wharton duct. The soldier felt a slight sticking sensation under his tongue, but did not realize what had happened, at the time. The submaxillary gland began to swell in about an hour, and in twenty-four hours it was twice the normal size. There was no acute pain.

The condition remained about the same from Sept. 11 to Nov. 27, 1913, the patient being free of pain in the interim. During this time he had been treated occasionally for a mild inflammation, with local applications of iodin, etc. Nov. 27, 1913, he began to suffer with pain and pressure symptoms, and was transferred to Field Hospital No. 3, for observation and treatment. Here his history was gone over carefully and he was observed for a few days. He suggested that the grass was the obstrusive agent, but the possibility of it having traversed the duct seemed so remote that we attached no credence to the soldier's statement.

The duct was explored for calculi and stenosis, but was found patent throughout its course. We were unable to determine what was the cause of the glandular involvement.

Dec. 3, 1913, the glandular tumefaction became more marked and there was extensive periglandular cellulitis, accompanied with fever and pain. We decided to excise the gland before suppuration ensued.

The gland was removed *in toto*, and when it was excised, a piece of grass (seed-tufts) ¾ inch long was found embedded in one of the ramifications of the excretory duct. There was slight necrosis of the glandular tissue, where the grass was imbedded. The concomitant cellulitis of the neck subsided in forty-eight hours, and the wound healed by first intention.

Plum-Stone in Rectum Causing Inability to Micturate on Account of Pain.—I was called to see a man, aged 34, who said that on the morning of the day on which he was seen, although he had frequent desire to urinate, he was unable to do so and the attempt produced sharp pain in the anus. in the anus became more severe with each attempt to void urine. There was no history of similar trouble. Abdominal examination showed a distended bladder and on rectal examination a plum-stone was found, lying point down between the sphincter internus and the sphincter externus, with the point embedded in the sphincter externus. Removal of the foreign body gave immediate relief and in a few minutes the patient voided over 30 ounces of urine. The plum-stone had been swallowed forty hours prior to the onset of symptoms.—W. F. Dey, M.D., La Grange, Ill.

Anthropologic Research in Portugal.—The facial index as studied on 585 craniums is discussed from various points of view in the big quarterly, the *Revista da Universidade de Coimbra*, 1914, iii, 314.

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SATURDAY, AUGUST 1, 1914

THE NUTRITION OF THE NEW-BORN

During the first few days after birth the human infant experiences a well-known decrease of body weight, which is generally regarded as an entirely physiologic consequence. The average weight of the new-born male approaches 3,500 gm. (8¾ pounds); that of the female infant 3,200 gm. (8 pounds). The initial loss of weight which continues for two or three days as a rule may amount to 250 gm. or over, ranging usually between 150 and 200 gm. In explanation of the phenomenon it is ordinarily conjectured that the natural supply of nutriment soon after birth generally is inadequate. The discharge of the meconium, which may not take place until some interval after birth, is an added reason for a drop in body weight. Under normal conditions the original weight at birth is regained again by the child at the end of from eight to fourteen days; and subsequently the increments in size characteristic of growth proceed in health without interruption. Continued loss of weight or even cessation of growth with stationary conditions at this period must be looked on with suspicion. Frequently they are indexes of some pathologic condition; but when they occur in comparatively early life they merely represent a sort of inanition attributable to inadequate secretion of milk by the mother.

In a series of observations made in the maternity wards of Bellevue Hospital in New York City, Bailey and Murlin[1] found that the initial weight loss there averages over 250 gm., and that this loss is increased by lengthening the interval of feedings and lessened by the supplementary feeding of a milk mixture similar to colostrum. The infants were able to take the extra feedings without any disturbances of digestion. This has raised the question whether it would be desirable from a physiologic standpoint to furnish some artificial food together with the colostrum during the first three days of life. Analyses of second- and third-day colostrum show that its utilizable heat value averaged 65 calories per hundred cubic centimeters. To offset this pronounced food value, it appears that the average amount of breast secretion is only 14 cubic centimeters on the first day, 77 cubic centimeters on the second day, 173 cubic centimeters on the third day and from that time on gradually increasing to 372 cubic centimeters on the sixth day, hardly, in the first three days at least, an amount that would give the infant much nourishment.

Bailey and Murlin have determined the actual energy requirement of the new-born by means of a respiration incubator. The respiratory quotient reaches as high as 1.0 on the first day of life and indicates the combustion of carbohydrates. Thereafter it drops to 0.67 on the second day and remains in the neighborhood of 0.70 for the following two days indicating a condition of starvation and the combustion of fat. After the milk secretion is well established, the quotient reaches 0.90, which is the normal for a mixed diet. The average food requirement for combustion alone during the first four days of life for a large infant weighing 4.5 kg. is 1.7 calories per kilogram per hour; and for a small infant weighing 3 kg. is 2.0 calories per kilogram per hour.

Comparing the calories per hundred cubic centimeters of samples of colostrum with this requirement, the New York investigators make it evident that the infants would have to suckle at least 30 cubic centimeters at ten feedings. This is an amount that the breast does not secrete, at least until the fourth day. They conclude that feeding the new-born infants for the first three days, in addition to the breast secretion, a formula of about the same composition as colostrum would appear to be a logical proceeding not only to fulfil the energy requirement but also to supply the water lost. Even after the breasts are secreting a considerable quantity of milk, it would seem to be rational to feed these babies as often as every two or two and one-half hours during the day or eight or nine feedings in all. The suggestions here raised may seem radical to those who have looked on some of the earliest unfavorable nutritive experiences of infants as inevitable and physiologic. Perhaps they will now inaugurate a useful departure in the practical aspects of infant nutrition at this beginning of the period of growth.

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[1] Bailey, H. C., and Murlin, J. [illegible]: The Energy Requirement of the New-Born, Proc. Soc. Exper. Biol. and Med., 1914, xi, 109.

UROBILIN

A group of derivatives of blood and bile pigments, containing the pyrrol nucleus, has become familiar in medical literature under the name "urobilin." That these substances have proved unsatisfactory as an aid in diagnosis and prognosis is no more than has been found true of many other supposedly characteristic functional tests in the disorders of individual organs. Many of the facts elicited by the study of abnormal conditions in the body are of decided value in diagnosis; the limitations are found when attempts are made to render certain reactions specifically and unreservedly applicable to some special pathologic situation. Even the variations in the secretion of a substance so specific as the hydrochloric acid of the gastric juice cannot always be charged to local organic or functional defects of the stomach mucosa; for not a few failures of proper secretory performance on the part of the gastric mechanism are caused by remote factors such as perverted nervous states.

The theories which have been advocated with respect to the origin and clinical significance of urobilin have been reviewed in elaborate detail by Drs. Wilbur and Addis[1] of the department of medicine in the Leland Stanford Junior University. There is at present no common agreement on all the points involved. The theory long maintained by Friedrich von Müller that urobilin originates from the bacterial decomposition of bile in the intestine is generally accepted. But whether urobilin may also at times have a non-enterogenous origin — whether or not it may be formed in the liver itself, or can be produced in the tissues directly or indirectly from hemoglobin — these and other questions have been raised and tentatively answered again and again. As the California clinicians remark, when such variable factors as the bacterial changes within the intestine, the absorption from it, the activity of the liver, the elimination of bile, the secretory power of the kidneys, the rate of destruction of the red blood-corpuscles, the activity of the spleen, etc., have been taken into account, it is not surprising that difficulty should arise in interpreting the findings and in correlating the ideas obtained in the laboratory with those gained at the bedside.

The formation of urobilin from the decomposition of bile within the bowel is admittedly the usual mode of origin of urobilin and urobilinogen, which may then be absorbed into the portal system and thus reach the liver. If this organ is normal the major portion of the urobilin is either destroyed or resynthesized to bile or blood pigment. When the liver parenchyma is damaged, these changes in the urobilin may not occur, and consequently the substance passes into the general circulation and is eliminated by the kidneys. On this ground the existence of pronounced urobilinuria has been interpreted as indicative of severe hepatic disorder. In the complete closure of the common duct caused by carcinoma, for instance, there is usually absence of urobilin from the urine, bile and stools.

Wilbur and Addis further accept the evidence that the diseased liver may originate urobilin either directly as a product of its cells, or indirectly from decomposition of bilirubin within the bile-passages. Patients in whom no bile is reaching the intestine may nevertheless show urobilin in large amount in the bile, and to some extent even in the urine and stools, if the liver itself is diseased or functionally deficient. The urobilin excreted in the urine and stools of such patients must be derived by the blood from the liver. Again, an increased quantity of urobilin in the stools indicates increased blood destruction. In such cases the excessive amount of urobilin in the urine is not caused by any obvious disease of the liver; but from the increase of urobilin carried from the intestine to the liver, enough reaches the kidneys to lead to an obvious urobilinuria.

The primary feature to be emphasized is that there is a close association between increase of urobilin in the urine and a disturbance of liver function. But, Wilbur and Addis conclude, even if increased blood destruction is excluded by estimations of urobilin in the stools, it is not at present possible to regard the amount of urobilin in the urine as an approximate guide to the functional efficiency of the liver. The occasional occurrence of large amounts of urobilin in the urine of patients in whom there is no reason to suspect damage to the liver, the great and irregular fluctuations of urobilin excretion from hour to hour and from day to day in cases of liver disease, and the want of knowledge as to the fate of urobilin in the blood and tissues, make it necessary to recognize that other factors than the condition of the liver and the amount of blood destruction may influence the excretion of urobilin in the urine. To evaluate these correctly for purposes of diagnosis still remains as a worthy task for the workers in clinical medicine to accomplish.

MILITARY SURGERY IN THE BALKANS

Octave Laurent, surgeon of St. John's Hospital, Brussels, who followed the troops in the Balkans for eleven months, has issued a volume[1] on the war in Bulgaria and Turkey from the point of view of a surgeon which is interesting as the most recent evidence on the fatality of modern arms and the problem of care for the wounded which follows modern battles. It contains a discussion of most of the unsettled problems as to whether the artillery or the infantry is most deadly and which is the more crippling for the moment. Laurent emphasizes above all the fact that military surgeons cannot be improvised out of the ordinary surgeons of civil life, but to be really life saving in their efforts they must have seen special service and had particular experience with gunshot wounds and military conditions.

At the beginning of the Balkan war, Bulgaria had a population of about 4,300,000, and put into the field more than 500,000 soldiers. In the first war 30,000 were killed and about 53,000 wounded. In the second war 16,000 were killed and 62,000 wounded. Thus one third of the effective force of the entire army, or 3 per cent. of the population of the country, were either killed or wounded. The deaths reached one in twelve of the whole army, one in four of the wounded and one in a hundred of the entire population. These figures serve to give some idea of what modern war means.

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[1] Wilbur, R. L., and Addis, T.: Urobilin: Its Clinical Significance, Arch. Int. Med., February, 1914, p. 235. An elaborate bibliography is appended to the paper.

[1] Laurent, Octave: La guerre en Bulgarie et en Turquie, Paris, Maloine, 1914.

In spite of the thorough training of the soldiers and the years of service to which they had been subjected, the old proverb that it takes much more than his own weight of lead to kill a man in battle held true during this Balkan war. Altogether Bulgaria used during the last war 32,000,000 rifle-bullets and 27,000,000 shrapnel balls, so that scarcely more than 1 in 200 bullets found, in the expressive phrase, its human billet. The artillery was responsible for more than half of the deaths, but less than one fifth of the wounded.

Owing to their high velocity, bullets from the modern rifle often make wounds with surprisingly few serious consequences. Laurent reports cases in which a ball traversed the brain, pierced the chest or penetrated the abdomen, with comparatively mild results. In some of these apparently dangerous cases the wounds healed promptly without any disturbing consequences or symptoms. Sometimes bones were perforated with only insignificant traces of the passage of the bullet, especially when it traversed the epiphyses. On the other hand, the fractures of the large bones were numerous and complicated and deserve special study. The mortality was distributed as follows: 55 per cent. due to wounds of the head; from 35 to 40 per cent. to wounds of the trunk, and 5 per cent. to wounds of the limbs.

Quite contrary to the usual supposition, there were extremely few serious wounds of the abdomen which called for laparotomy in the hospitals. There was a much larger proportion than might have been expected of aneurysms and especially of nerve-lesions of various kinds. Direct rifle-bullet wounds were often almost absolutely innocuous, and wounds of the head as a striking feature were followed with extreme rarity by serious deformities of the face. Amputations were rare, less than 1 per cent. of all the cases treated in the hospitals requiring it, while trephining was relatively much more frequent. The results of a second operation under chloroform of wounded soldiers whose wounds had become infected were always very discouraging.

Summing up the results, Laurent says that during the single month of July, 1913, 150,000 men were killed and wounded on both sides, and of these more than half, at least 80,000, fell on the banks of the Bregalnitsa in the six days from June 30 to July 5. He quotes with approval the remarks of a commentator on these figures who says:

> If you put a zero behind each of these numbers you will have some idea of the effective strength of the armies and the losses that must be presumed to take place in any war which would to-morrow set the armed forces of any two first-class powers of Europe on the fighting line before each other. There would be not less than 1,500,000 dead and wounded in the course of the first month.

This summary of the deadliness of modern war and prophecy as to the immediate future might very well be thought the expression of some sensational notoriety seeker, did they not occur in the midst of the story of the authoritative experiences of a distinguished Belgian surgeon, whose treatise on clinical surgery has now reached its third edition and who is an honorary and corresponding member of a number of foreign medical societies. He has given many details of the unusual cases seen in his eleven months of campaign, and a series of 300 illustrations which serve to show how serious are the conditions that develop especially from wounds of the bones and of the nervous system in modern military surgery.

THE ISLANDS OF LANGERHANS AND DIABETES

Although the correspondence is by no means complete in all the symptomatic details, it is nevertheless admittedly true that ordinary types of human diabetes quite closely resemble experimental pancreatic diabetes. Opie, in particular, has shown that diabetes in man is frequently associated with lesions of the islands of Langerhans, whereas extensive pancreatic lesions which do not involve the islands do not cause diabetes. It is frankly admitted, however, that many cases of diabetes occur in which no anatomic changes whatever can be detected in the pancreas, and that in other cases the lesions of the parenchyma plainly preponderate over those of the islands of Langerhans.

We may well admit that carbohydrate metabolism in the body is in some way bound up with the functions of the pancreas, without being able to give a final verdict whether the acinous tissue or the islands of Langerhans are the most important epithelial elements concerned in this rôle of the gland. The conflict of opinion has sometimes seemed extremely uncompromising. Some writers have insisted on including the islands, along with the parathyroids, the epithelial portions of the hypophysis and the adrenal cortex, in the category of the "glands of internal secretion." On the other hand, from among investigators of long experience in this field, we may quote the recent conclusions of Swale Vincent.[1] "Despite whatever future study may disclose in respect to the real functions of the islands of Langerhans," he writes, "their intimate anatomic relation with the zymogenous tubules, the numerous transitional forms found in all classes of vertebrates, and the transformation of alveoli into islands and vice versa—all these facts appear to furnish conclusive evidence that the islands are not organs *sui generis*, but merely an integral part of the ordinary pancreatic tissue. Whether temporary modifications into the islet tissue represent a peculiar specialization of function cannot be regarded as demonstrated at the present time."

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[1] Vincent, Swale: Ergebn. d. Physiol., 1910, ix, 489.

It would be an easy task to present a large number of opinions of both earlier and later investigators dealing pro and con with the fundamental question here at issue. In such a problem negative evidence, that is, the failure to observe anatomic lesions, is as a rule less significant than concordant positive signs of disease; for doubtless alterations which are not revealed by our present microscopic technic may occur in cells and yet cannot be discovered in the usual manner of examination. The proper attitude of the passing moment, therefore, would seem to be that of an open mind ready to receive any new evidence based on the results of investigation which bears the marks of efficiency and adequate criticism. It is not enough to repeat the experimental procedures of the past and accumulate further statistical histologic evidence. Every new research must go a step farther than its predecessor, must subject every case to suitable rigorous control, must exclude known interfering factors or complicating agencies.

In many of the earlier experiments the external secretion was prevented from escaping from the pancreas. It has been thought that the sclerosis which always follows the conventional procedure of ligation of the ducts might affect not only the acini, but also the islands. Homans[2] of the Laboratory of Surgical Research in the Harvard Medical School therefore concluded to cut down very considerably the amount of pancreatic tissue, without interference with the portions adjacent to the duct of Wirsung. Under these circumstances sclerosis and atrophy would be prevented and the animal would have preserved for digestive functions a considerable though diminished amount of pancreatic juice. It was believed that the physiologic functions of the pancreatic fragment would, though unimpaired, be taxed to their maximum; that sufficient pancreas could be removed to render the animal permanently but mildly diabetic, and that at various periods following operation, the remaining portion of the gland would show some evidence of physiologic strain.

Homans concludes that the islands of Langerhans must be deeply concerned in experimental pancreatic diabetes for the following reasons: The removal of more than three-quarters of the pancreas, leaving the main duct *in situ*, usually leads to a disappearance of secretory granules in the islands, with suggestive evidence of overactivity, without the production of diabetes. The same procedure occasionally causes a degeneration of the island of Langerhans accompanied by fatal diabetes without disturbance of the remaining acinous tissue. Whatever may be the explanation of the discrepancy between the results of duct occlusion and duct patency on the islands when only a small fragment of pancreas is retained, the fact remains that if in such a fragment the external secretion is allowed to escape freely into the intestine (as it does in most cases in man) the effect on the islands of Langerhans of diminishing the pancreatic tissue is nevertheless profound. Perhaps it is not an unfair conclusion to say that the burden of proof is beginning to fall on those who fail to see in lesions of the island tissue anything pathognomonic of diabetes.

THE TREATMENT OF CYSTINURIA

Cystinuria may fairly be classed among the rarities of medical practice. Presumably the perversion of metabolism whereby cystin, one of the amino-acid fragments of the protein molecule, is not destroyed in the body as it is in a normal person, is not so uncommon as statistics might lead one to believe. As the metabolic disorder may exist for very long periods without revealing itself by any easily detected symptom other than the presence of the unutilized cystin in the urine, the discovery of the cases becomes more or less fortuitous. Only when urinary concretions arise to direct attention to their cause, or when the presence of cystin is detected by chance in a routine examination of the urine, does the anomaly come to the knowledge of those who are interested in its cause and treatment.

From the point of view of the patient the chief problem in connection with cystinuria is either to decrease the output of cystin or to increase its solubility in the urine—or both—with the aim of avoiding the impending danger of calculi. The pronounced insolubility of cystin in urine of the usual reaction makes the possibility of attacks of "kidney colic" and related consequences an ever-present one. It has long been known that the output of cystin can be decreased by a diminution of the metabolism of its mother-substance, protein. In the entire absence of any intake of albuminous foods, the urinary excretion of cystin is reduced to an endogenous level, represented in an illustrative case in the literature by 78 mg. a day.

The fact that cystin is soluble in alkalies led Klemperer and Jacoby[1] of the Krankenhaus Moabit in Berlin to study the results of alkali administration in cystinuria, precisely as it is sometimes practiced in urate "diathesis." In a suitable case it was observed that the deposited cystin sediment promptly decreased in amount and soon completely disappeared from the urine following the daily ingestion of from 6 to 10 gm. of sodium bicarbonate. From the point of view of preventing the precipitation of cystin and consequent formation of calculi, this treatment was evidently successful. Incidentally, it further developed that even dissolved cystin entirely disappeared from the urine as the result of the alkali therapy. The explanation of this most unexpected result is by no means clear. It is known, of course, that cystin is unstable in alkaline fluids and decomposes therein. One can hardly assume, however, that the alterations, small at best, which the body-fluids can undergo with respect to alkalinity as the result of such dosage[2] are adequate to account for the profound effect noted. As yet the data are limited to a single patient and should not be made the basis of an unwarranted hypothesis. The rarity of the cases of cystinuria, however, and the prominence of the clinician and chemist who have reported the findings, are taken as a justification for the record of this seemingly unique outcome of alkali therapy.

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[2] Homans, John: Degeneration of the Islands of Langerhans Associated with Experimental Diabetes in the Cat, Jour. Med. Research, March, 1914, p. 49.

[1] Klemperer, G., and Jacoby, M.: Zur Behandlung der Cystinurie, Therapie der Gegenwart, 1914, lv, 101; abstr., The Journal A. M. A., April 11, 1914, p. 1207.

Current Comment

RAILROAD WATER-SUPPLY IN MINNESOTA

The United States Public Health Service has just issued a most interesting report designated as Reprint 191, containing a summary of the inquiry into the character of railroad water-supply in Minnesota, made by the director, the assistant director and the chemist of the laboratory division of the Minnesota State Board of Health. Under the act of Jan. 25, 1913, common carriers engaged in interstate traffic are required to furnish water for the use of passengers which shall be certified to by the state or municipal health authority within whose jurisdiction it is obtained. This provision made it necessary for the state authorities to secure accurate information regarding the sources and character of the railroad water-supplies. In undertaking this investigation, each railroad in Minnesota was asked to submit a list of localities from which water was taken for drinking purposes on its trains. As the replies were received, the different localities were listed and the state divided into districts. Suitable methods for inspection of the source of the supply and analysis of the water itself were then devised. It was found that the railroads secured water for their trains from sixty-one different localities in the state. Of these, there were eleven dug wells, twenty-nine drilled wells and two driven wells. Water was taken from springs in five cases and from mine drifts or shafts in two, making a total of forty-nine cases in which the water is taken from underground sources. In nine cases surface water was used, five of the sources being lakes, three rivers and one creek, while in three cases the source was a combination of drilled wells and river, lake or spring. Regarding the results of the field investigation, in thirty cases the source of supply was found satisfactory and in thirty-one unsatisfactory, while the results of the water analysis showed the water itself to be satisfactory in forty-three cases and unsatisfactory in seventeen. This brought out the interesting fact that neither field survey nor water analysis can be relied on alone to determine the sanitary value of a water-supply. The report says: "If analytical results alone were depended upon to determine the sanitary value of these water-supplies, forty-three would have been found satisfactory and seventeen unsatisfactory. On the other hand, when the field investigation is also taken into consideration, only twenty-nine are satisfactory while thirty-two are unsatisfactory." The explanation of this apparent discrepancy is that in many cases, endorsement of the water-supply was withheld, not because the water was polluted at the time of the investigation, but because the inspection showed avenues by which pollution might easily occur. The summary of the report shows that over 50 per cent. of the supplies investigated (thirty-two out of sixty-one) could not be endorsed and that of these, thirty-one were found to be unsafe by the field investigation, while only sixteen showed analytical evidence of pollution. The report, therefore, concludes that "a careful and adequate field investigation in addition to the analytical investigation is required before a satisfactory opinion should be ventured concerning the safety of a given water-supply." An encouraging feature of the report is the final statement that practically all of the condemned water-supplies can be converted into safe supplies at a relatively small cost by following out the specific recommendations made in each case. This statement leaves no room for evasion of responsibility on the part of the railroads. Practically every railroad water-supply in Minnesota that is not already safe can be made so at a small expense. Pure water should be demanded by the public, not only on all of the railroads of Minnesota, but also on those throughout the country.

SEEING OURSELVES AS A MEDICAL PUBLISHER SEES US

To the public all medical journals are medical journals — to the intelligent, thinking doctor, they are not. The *Medical Standard* is one of those that are not. It is published by George P. Engelhard of Chicago, a gentleman who looks at the medical profession from two angles: one, as a means of making money for Engelhard; another, as something on which to vent his spleen when defending the "patent-medicine" interests. When the "patent-medicine" men's organization—the Proprietary Association of America—met a few weeks ago in New York at its annual convention, Mr. Engelhard, as usual, was on hand and delivered an address. This address has been reprinted and is being distributed. We give some choice excerpts for the purpose of letting physicians know just what Mr. Engelhard thinks of them:

> "Go once to the doctor, and you will go a dozen times. (Applause.) If you are not sick when you go, you are pretty sure to be sick before you get through."
>
> "What high and holy character attaches to the men of the medical profession that their seal must be upon everything pertaining to the health and life of the people before it is safe?"
>
> "It is a part of the medical ethics that a consulting physician shall never question the infallibility of the doctor who has called him in. You never find outside the sacred precincts of the medical meeting room the truth told about the doctors. They will tell the truth about themselves among them-

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[2] Some Newer Aspects of Acidosis, editorial, The Journal A. M. A., May 30, 1914, p. 1726.

> selves but they want no hearing by or of reform from outside agencies. Anything to deify the medical man, anything to deify the function of the physician."
>
> "The menace to American life and health to-day, I repeat, is not in the proprietary ["patent medicine"] industry . . . but the crowning menace to the health and life of the people of America to-day is incompetency or worse in the regular medical profession. (Applause.)"

And this, gentlemen of the "regular medical profession," is what George P. Engelhard, publisher of an alleged medical journal, the *Medical Standard*, and of an alleged drug journal, the *Western Druggist*, thinks of you.

ADVERTISING BUSINESS PURIFIES ITSELF

In the news columns of a recent issue,[1] reference was made to the "*Printers' Ink* bill" for the regulation of advertising. This bill prepared originally by the *Printers' Ink* Publishing Company has now been passed by twenty states, eight of which (Ohio, Washington, Rhode Island, Minnesota, North Dakota, New Jersey, Nebraska and Louisiana) have adopted the model bill verbatim. In the other twelve (Connecticut, Indiana, Iowa, Maryland, Massachusetts, Michigan, New York, Oregon, Pennsylvania, South Dakota, Utah and Wisconsin) the model bill has been amended by the addition of the word, "knowingly," or "willingly," which materially weakens the measure. The bill has been passed by the legislature but vetoed by the governor in Maine and Colorado, defeated by the legislature in Virginia, Missouri, California, Kansas and Illinois and unfavorably reported by the committee in South Carolina. This bill was endorsed by the House of Delegates of the American Medical Association in Minneapolis in 1913. It is short but effective, providing that any person or organization making any false statement in advertising any goods for sale shall be guilty of a misdemeanor. A bill similar in intent but different in phraseology has been introduced into the House of Representatives by Mr. Kreider of Pennsylvania. This bill, known as H. R. 11016, makes it a misdemeanor for any person or organization to knowingly make or disseminate any statement concerning the quantity, quality, value, merit, use, present or former price, purpose or motive of a sale of any securities, merchandise, articles, commodity or services, or concerning the method or cost of production or manufacture of such articles or the manner or source of purchase of such articles that enter into interstate or foreign commerce which is untrue or calculated to mislead. Mr. Kreider's bill also includes the weakening word, "knowingly," presence of which makes it necessary to prove actual knowledge on the part of the advertiser in order to secure conviction. The adoption of the *Printers' Ink* bill or its equivalent by Congress and by all of our state legislatures will mean a new era of business honesty. The Journal of the American Medical Association is, of course, primarily interested in securing honest methods and products in its own peculiar field, namely, that of medicinal preparations offered for sale either to the profession or to the public. Honesty in business, however, is not readily divisible into classes. The leaven of sincerity must permeate the entire mass. The most far-sighted and progressive business men have recognized that honesty and truthfulness are indispensable assets for the successful conduct of any business. The strongest force for the purification of advertising to-day is the growing determination on the part of advertising men themselves to put an end to the deception and fraud which have so long characterized some phases of this business.

IODIN IN SPECIFICALLY INFLAMED TISSUES

The detection of iodin as a normal constituent of the animal body and its peculiar localization in the thyroid glands was the fortunate outcome of an accidental observation by Baumann in 1895. The credit for such "lucky strikes" in science is not to be minimized because they represent unexpected findings. Keen observers have contributed quite as much to the advancement of knowledge as have the more systematic routine investigators. A recent instance of a chance discovery is reported by Lewis and Krauss[1] from the Henry Phipps Institute of the University of Pennsylvania. In examining the relative distribution of iodin-yielding drugs in healthy and diseased tissues, respectively, they ascertained that tuberculous tissue derived from animals to which no iodin preparation had been knowingly administered may contain amounts of iodin very appreciably higher than the normal control of the same animal. For example, the tuberculous cornea of rabbits inoculated in one eye with tubercle bacilli was found to have as much as 2.67 mg. of iodin per gram of dry tissue, whereas the healthy cornea was iodin-free. This apparent deposition of an element of supposed physiologic potency in specifically inflamed tissue raises some novel questions in pathologic chemistry, among others the influence of various articles of diet and conditions of various organs, particularly of the thyroid, on the content of iodin in the tissues.

Medical News

ARIZONA

Personal.—Dr. Frank W. Randall, Douglas, has tendered his resignation as city physician. He is serving as lieutenant colonel in the Mexican Constitutionalist Army, under Cabral.

ARKANSAS

Personal.—Dr. William C. Tipton, Mountain Home, has been appointed by the State Board of Charities to be physician at the Confederate Soldiers' Home, Little Rock, to relieve Dr. Mason, who will go to Eagle Springs for his health.——Drs. Isaac N. McCollum, Joseph S. Westerfeld and Cecil H. Dickerson have been appointed members of the Conway Board of Health, the first two being respectively chairman and secretary.——The appointments of Drs. J. Hal Neal, Jr., Fort Smith, and John T. Perry, Greenwood, as health officers of their respective districts, have been confirmed by the state board.

CALIFORNIA

Personal.—Dr. Alexander S. Kelly, Oakland, has been reelected president of the Board of Education.

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[1] Model Vital Statistics Bill, Medical News, The Journal A. M. A., July 18, 1914, p. 251.

[1] Lewis, P. A., and Krauss, R. B.: The Iodin Content of Tuberculous Tissue, Jour. Biol. Chem., 1914, xviii, 313.

City Relief Home to be Enlarged.—Superintendent O. M. Wallenberg of the City Relief Home, San Francisco, having complained of the congested condition of that institution, plans for enlarging it have been ordered prepared.

Action to Protect Water.—The San Diego city council has been notified by the members of the county medical society that filtration of the city water is necessary to protect the city against communicable diseases. Samples of water from various localities have shown dangerous conditions.——The San Francisco Board of Health is considering a protest made against the contamination of the watershed in Pleasanton Valley by a real estate company, which plans to sell the watershed to the city, and the land to farmers.

Escape of Lepers from Hospital.—The escape of five lepers from the Los Angeles County Hospital is to be made the subject of grand jury investigation, according to the county health commissioner, Dr. Edmund O. Sawyer. One Japanese and four Mexican lepers escaped during April and June, owing, it is said, to the inability to maintain proper supervision. There are now four lepers in the hospital colony, but it is said to be utterly impossible to keep a satisfactory watch over them. The occurrences are considered additional reason for the establishment of a national leprosarium.

ILLINOIS

Personal.—Dr. Claude B. Higby, Eureka, has sold his practice to Dr. Robert H. Smith of Seaton, and will leave soon for Los Angeles, with his family.——Drs. Robert C. Bourland, John E. Tuite and Dudley W. Day, Rockford, have been appointed medical examiners of the pension board.

Health Inspection of Railroad Depots.—The State Board of Health field inspectors are to begin a tour of inspection of railroad depots. They will consider especially sanitation of toilet-rooms, water-supply, cleanliness of waiting-rooms, cuspidors, sanitary conditions of restaurant kitchens and eating-places, ventilation and disposal of waste, and conditions of the stock-loading pens in the vicinity.

INDIANA

Model Tuberculosis Cottage Erected.—A portable cottage for tuberculosis patients has been erected in Goshen by the Elkhart County Anti-Tuberculosis Society. A second one has been donated by the manual training school of Bristol and will be erected soon.

Howard County to Issue Book on Care of Babies.—Dr. Burton A. Thompson, county health officer, is about to issue a book on the care of infants—their food, clothing, baths and common diseases—for free distribution among mothers, with the purpose of cutting down the death-rate among children.

Training School for Nurse-Maids.—Dr. Eugene B. Mumford, who has recently returned from postgraduate work in the East, and director of the milk clinic of the Children's Aid Association, Indianapolis, has started a training school for nurse-maids. They expect to train girls of good character to keep babies well, but not to take care of sick children.

Violation of Medical Practice Law Charged.—Affidavits against Mrs. Ada Converse and Miss Edith Cloyd, Christian Science practitioners, charging them with violating the state law for practicing medicine without a license, have been filed at Richmond, Ind. The reason of this was the death of Dorothy Murray, a 5-year-old girl, who died of diphtheria and had been treated by them.

Personal.—Dr. Harry S. Mackey, Indianapolis, has been appointed physician for the new inebriate ward at the Marion County workhouse, which has been opened at a cost of $1,800.——Drs. William F. Clevenger, Thomas Hood and J. Rilus Eastman, Indianapolis, have sailed for Europe to spend the summer.——Dr. Charles H. Loomis, Laporte, who has been ill in Christ Hospital, Cincinnati, for several weeks, has returned to his practice.——Dr. Darmon A. Rhinehart of the department of anatomy of the University Medical School, Bloomington, has resigned his position to accept that of head of the department of anatomy in the Medical School of the University of Arkansas, Little Rock.

IOWA

Tuberculosis Hospital Opened.—The Scott County Tuberculosis Hospital, which cost $75,000, was opened July 4. It is intended to give fresh-air treatment.

Health Officers Given More Power.—The State Board of Health, July 9, adopted a new rule giving health officers absolute power in handling cases of quarantine for contagious diseases.

New Officers.—Austin Flint Cedar Valley Medical Society, at Cedar Falls, July 14-16: president, Dr. George Kessel, Cresco; vice-president, Dr. Thomas U. McManus, Waterloo; secretary, Dr. Charles F. Starr, Mason City (reelected), and treasurer, Dr. Will L. Hearst, Cedar Falls. The next meeting of the society will be held in Waverly, November 10.

Changes in Fee-Bills.—The Clarke County Medical Society, July 2, made the following changes in fees, which became effective July 15: day calls in town, $2; day visits in country, $2 with mileage as follows: first mile $1 and each additional mile 50 cents; night visits (9 p. m. to 6 a. m.) 50 per cent. additional; confinement cases (normal), $15 in town, with mileage as shown in country; consultations in town, $10, with mileage as above in country; life-insurance examinations; $5, anesthetics in town $10, with mileage as above in country.

Personal.—Dr. James R. Guthrie, Dubuque, dean of the College of Medicine of Iowa University, and member of the faculty during twenty-five years, has resigned from the Iowa Board of Education, and has been made dean emeritus of the College of Medicine. Dr. Lew Wallace Dean, Iowa City, has been elected to succeed Dr. Guthrie.——Dr. Henry F. Steinle, Burlington, is in Europe.——Dr. Roscoe P. Carney, Davenport, has been selected as temporary head of the Scott County Public Hospital.——Dr. Edward E. Dorr, Des Moines, has resigned from the executive committee of the Associated Charities.

KANSAS

Personal.—Dr. Wilson R. Priest, Concordia, has been appointed consulting surgeon to St. John's Hospital, Salina.

Sanitary Survey of County Schools.—Dr. Jacob L. Everhardy, Leavenworth, health officer of Leavenworth County, has been personally inspecting all school houses in the county, and has addressed circular letters to the clerks of the schools instructing them as to the keeping of the schools in a sanitary condition.

MARYLAND

New Health Offices Open in September.—The new city health offices to be occupied by the Health Department, in charge of Health Commissioner Nathan R. Gorter, will be ready for occupancy by September 1. All the subdepartments except those of bacteriology and chemistry are now located in the new building. The general public will be offered an early opportunity to view the facilities for work of the department.

Health Survey for Dorchester County.—Surgeon Leslie L. Lumsden, Public Health Service, and Dr. John S. Fulton, secretary of the State Board of Health, are to make a thorough inspection of health conditions in Dorchester County. It is expected ultimately to cover the entire state in this manner. Recommendations will be made as to general improvements in sanitation. Dr. William H. Welsh, president of the state board, in now in Europe. On his return the board will take up the matter of appointments for six additional health officers. At the last session of the legislature, the state was divided into ten sections, and provisions made for a health officer for each district. So far but four officers have been appointed.

MASSACHUSETTS

New Heads for Boston Dispensary.—Drs. Henry M. Chase and Hilbert F. Day have been appointed surgeons in charge of the Boston Dispensary, by the board of managers of that institution, to fill the vacancies left by the retirement of Drs. Benjamin Tenney and John Homans, who will continue as consulting surgeons.

Floating Hospital Celebrates Bennet H. Nash Day.—One hundred and four beneficiaries were taken on the floating hospital recently, in honor of Bennet H. Nash day, named by Mrs. Nash in memory of her husband, who was the friend of that philanthropy. Several other days have been named for the gifts of various philanthropic citizens. By this method the work of the floating hospital has been considerably extended. There are sixty-nine nurses on the staff of the hospital this season, more than ever before.

Dr. A. G. Rice to Preside at Open Air School Association Session.—Preparations are being made for the Philadelphia meeting of the American Open Air School Association, of which Dr. Allen G. Rice of Springfield, Mass., is president and chairman of the board of directors. The session will be held in conjunction with that of the Fourth International Congress on Home Education and the efforts of the committee on program just now are directed in securing papers from teachers, investigators, physicians and others dealing directly with results secured through fresh-air class rooms.

Association for Prevention of Infant Mortality to Meet in Boston.—The first program of the National Conference of the American Association for the Study and Prevention of Infant Mortality, to be held in Boston during November, 1914, has just been announced. All of the general meetings are to be open to the public; the first will be held at the Harvard Medical School, Thursday afternoon, November 12. This meeting will be a joint session with the Massachusetts State Conference of Charities, which has moved the date of its convention forward in order to cooperate with the first named association.

MISSISSIPPI

Toxins and Vaccines to be Supplied at Cost by State Board.—The State Board of Health has voted to distribute to the public at cost vaccines and toxins, including diphtheria and typhoid toxins and vaccines.

Personal.—Dr. Charles A. Sheely, Gulfport, has resigned as a member of the school board.——Dr. Noel C. Womack, Jackson, has been appointed a member of the State Board of Health to succeed Dr. Giles S. Bryan of Amory, who has resigned.——Dr. Joseph M. Ware has been appointed to perform the duties of city physician during the absence of Dr. James P. Wall, who left for Europe, July 7.

Campaign for Free Tuberculosis Dispensaries.—The Mississippi Anti-Tuberculosis Campaign committee, in cooperation with the Federation of Woman's Clubs, is carrying on a crusade for the establishment of local free dispensaries and visiting nurses for each town in Mississippi. Large signs, moving-picture slides, literature and lectures are to be provided, and the expenses of the campaign are to be paid for out of the proceeds of the sale of Red Cross Christmas stamps in the state.

MONTANA

Montana State Medical Association Holds Thirty-Sixth Session.—The thirty-sixth session of the Montana State Medical Association convened in Lewistown, July 8, 1914. President W. P. Mills presided and in his opening address reviewed recent progress in medicine and surgery. The scientific discussion which was of unusual interest included papers on every phase of medical study. Special addresses were delivered by Dr. Justus Matthews, Rochester, Minn.; Dr. J. F. Golden, Chicago, Ill., and Dr. C. E. Sears, Portland, Ore. During the session entertainments were numerous, including a 70-mile auto ride over the beautiful Judith Basin and a banquet. The following officers were elected: president, Dr. J. H. Irwin, Great Falls; vice-presidents, Dr. J. C. Schapps, Butte; Dr. C. F. Jump, Bozeman, and Dr. P. L. Greene, Livingston; secretary-treasurer, Dr. E. G. Balsam, Billings. Bozeman was chosen as the next place of meeting.

NEBRASKA

Personal.—Dr. J. S. Butler, Superior, has filed an announcement of his candidacy for state senator.——Dr. George Tilden, Omaha, for over forty years alienist of the county board of insanity, has resigned owing to ill health following the death of his wife. He has notified the directors of the Old People's Home that he will endow it with a fund of $5,000, in accordance with the wishes of his wife.——Dr. Samuel K. Spalding has been appointed to fill Dr. Tilden's place on the board of insanity.

NEW JERSEY

Hospital Officials Elected.—The Camden County Tuberculosis Commission elected Dr. Lee J. Hammett, Glen Gardner, as superintendent of the county tuberculosis hospital.

Paterson Building New Hospital.—Ground was broken July 20, in Paterson, for the new institution to be known as the Nathan and Miriam Barnert Hospital. The plot consists of sixteen city lots in the finest section of the city, and is the gift of former Mayor Barnert, who will finance it completely. Brief exercises were held in connection with the inauguration of the first work on the institution. The complete outlay approximates $250,000.

Tuberculosis Sanatorium Nearing Completion.—The new tuberculosis sanatorium of Camden County at Ancona is now being fully equipped with sun porches and approaches, and it seems that no more beautiful or healthful spot could have been chosen than the eleven acres of land which are now being used. The furnishing and equipment of the various buildings are being purchased, and it is expected that the building will be occupied in a short time.

NEW YORK

Reciprocity between New York and Virginia.—Virginia and New York have drawn up a reciprocity agreement for the mutual endorsement of each other's medical licenses, providing the applicants have complied with all the specified requirements.

New York City

Personal.—Dr. and Mrs. John Hammond Bradshaw, Drs. James B. Conant, Joseph Sheehan and G. Randolph Manning have sailed for Europe.

St. John's Guild Asks Aid.—The Seaside Home and the Floating Hospital of St. John's Guild, which last summer cared for 57,887 babies, children and mothers, is sending out a strong appeal for financial assistance in carrying on its work.

To Study Ptomaine Poisoning.—The Department of Health announces that as it is very difficult to learn how prevalent ptomaine poisoning is in this city since the only opportunity the city has to study the subject is when there are a considerable number of cases and the newspapers call attention to them. The department will welcome reports of suspected cases of bacterial food poisoning from private physicians, and if requested will gladly undertake special investigations, both epidemiologic and bacteriologic.

Free Health Topics Movies.—The Department of Health has begun its moving picture exhibitions in the parks and on the recreation piers of the city. In all twenty shows will be given, ten in Manhattan, two in the Bronx, six in Brooklyn, and one each in Long Island City and Flushing. In Manhattan and the Bronx the department will be assisted by the Tuberculosis Committee of the Charity Organization Society; in Brooklyn and Queens by the Tuberculosis Committee of the Brooklyn Bureau of Charities. On the occasions of the exhibitions many pamphlets on the prevention of tuberculosis are circulated.

Bureau of Child Hygiene Asks Increased Appropriation.—The plans of the Bureau of Child Hygiene of the Department of Health for the year 1915 are now being formulated and the bureau will request a budget allowance of $554,670, or $123,780 more than this year. The increase asked for is to provide for nine additional medical inspectors, three surgeons, nine dentists and eighty-four nurses. The Bureau of Welfare of School Children of the New York Association for Improving the Condition of the Poor is supporting the Department of Health in this request.

Planning a Bureau of Public Health Education.—The Board of Health is to include a Bureau of Public Health Education as soon as a director for the bureau has been selected through examination by the civil service commission. The director, in order to qualify, must have a degree from a medical school, must have been engaged in public health work and should have some experience in editorial work. The position will pay $5,000 a year. It is said that New York is the first municipality in the world to employ a director of public health education.

To Investigate the Patent Medicine Business.—Dr. Sigismund S. Goldwater, commissioner of health, has announced that he has discovered an old section of the sanitary code which forbids the sale of fraudulent proprietary articles and that a systematic investigation of the patent medicine business would be begun at once. It is proposed to insist that the manufacturer of a patent medicine name the ingredients in the mixture and it is believed that public opinion is sufficiently enlightened to support this movement and to drive useless nostrums out of the market when their ingredients become known.

Insurance Company Opens Sanitarium.—The Metropolitan Life Insurance Company dedicated its new sanatorium at Mt. McGregor, 9 miles from Saratoga, on June 20. The plant consists of a group of cement buildings, including several open-air wards, an infirmary and several other buildings necessary to the administration of the institution. The sanatorium was built under the direction of Dr. S. Adolphus Knopf and Dr. John H. Huddleston, and cost $1,000,000. Among the speakers at the dedication services were Dr. Abraham Jacobi, Senator Brackett of Saratoga, Dr. Haven Emerson and L. P. Cox, president and manager of the Association of Life Insurance Presidents. The fact that 20 per cent. of all the mortality on the company's books was due to tuberculosis led the officers to establish this institution, which it is hoped will act as a lesson to policy holders, the employees of the company and to the public, and it is believed that merely as a business stroke it will prove one of the most valuable assets of the company.

Increase in Rabies Arouses Health Department.—During the first five months of 1914 there has been a decided increase in the number of cases of rabies in this city. In this time there have been 40 cases of rabies in the Bronx against 45 for the entire year 1913; in Manhattan there were 73 cases against 110 for 1913; in Queens there were 28 cases against 35 for the entire year of 1913; Brooklyn is the only borough not showing an increase and here there have been 19 cases reported for the first five months of 1914 against 73 for 1913. Thus far this increase has not caused a corresponding increase in the number of cases among human beings, but Dr. Sigismund S. Goldwater is working for an amendment to the present city ordinance which provides that dogs must be either muzzled or kept in leash during June, July, August and September. The objection to this part of the ordinance is that it limits the control of dogs to the hot months. The ordinance further states that dogs found at large may be taken up by the police or poundmaster and taken to the city pound, but this part of the ordinance is a dead letter because the city has no pound and no poundmaster. The new ordinance will provide for the establishment of a pound. Last year 60,000 dogs and 200,000 cats were taken up by the Society for the Prevention of Cruelty to Animals and it is stated that this is ten times the number taken up and disposed of in any previous year.

NORTH DAKOTA

Dedication of Tuberculosis Cottage.—A fully equipped cottage for the use of tuberculosis patients was dedicated at the State Sanatorium, Fargo, June 13, by the Arch Masons and Grand Chapter of the Order of the Eastern Star.

OHIO

Personal.—Dr. Ernest Crockett, Ashtabula, has been appointed coroner of Ashtabula County to succeed Dr. R. J. Baxter, Conneaut, resigned.

Leper to be Deported.—Salvatore Paluso, the leper at the Cleveland City Hospital, was deported to Italy by the United States government, July 20.

Health Board Resigns.—At the monthly meeting of the Adelphi Board of Health, July 16, four members of the board presented their resignations, to become effective August 1. The other member resigned some time ago. The resignations are said to be caused by no grievance, but were presented merely for personal reasons.

State Sanitation Statutes Supersede Those of Municipalities.—According to the ruling of Attorney-General Hogan, while Ohio cities with home-rule charters are exempt from some state laws, they are subject to all health laws involving police power, and are without authority to make and enforce regulations inconsistent with them. Orders of the state board are held to supersede those of city boards in all matters pertaining to the quarantine of individuals and public conveyances and against other cities. The attorney-general holds that if the city were threatened with an epidemic, the state board and not the city board has the right to impose quarantine on vessels, railroads, street-cars and private conveyances. Such quarantine ordered by the city board is ineffective unless approved by the state board.

OREGON

Personal.—Dr. Julius F. Neuberger, Portland, has been appointed assistant surgeon in the navy and assigned to duty on the *Colorado* to relieve Assistant Surgeon Percy F. McMurdo, also of Portland, who now returns to civil life.

PENNSYLVANIA

Reading Visiting Nurse Report.—At the July meeting of the Visiting Nurse Association of Reading, the report of the supervisor for the year showed that 803 visits had been made; 97 new patients enrolled; 8 discharged as cured; 52 as improved, and 13 sent to hospitals. The total number of deaths reached 7.

New Quarantine Hospital.—A new hospital for the care of immigrants suffering from the less serious contagious diseases is to be erected at the State Quarantine Station at Marcus Hook. The old building, where small-pox and cholera patients are now confined, will continue for that use and the new building will accommodate about 100 beds.

Philadelphia

Hospital News.—A contract has been awarded for the erection of a ward dispensary for the Germantown Hospital. The addition will be one story high, of structural steel and will cost about $30,000.

Baby-Saving Stations.—To aid in the summer campaign of baby-saving settlements, hospitals and private charities have established baby clinics and bureaus of information for mothers, all under the control of the Babies Welfare Association, the central bureau being in City Hall.

Personal.—Dr. John H. Girvin sailed for Europe July 21. ——Dr. George de Schweinitz has resigned as ophthalmic surgeon at the Philadelphia General Hospital.——Dr. Edward A. Shumway has been appointed by Dr. Richard Harte, the director of public health and charities, as honorary ophthalmic surgeon to the Philadelphia General Hospital.

Sale of Beer Decreasing.—According to the report of the Internal Revenue Department for the First District for the year ending June 30, Collector Lederer was in receipt of taxes amounting to $3,249,358.75 as compared with $3,318,061.50 in 1913, making a decrease of $68,702.75. The tax on spirits, however, showed an increase of $276,049.37, due principally to the use of alcohol in industry and arts. The tax on cigars and cigarettes for 1913 was $2,699,091.57 and for 1914, $2,763,884.58; that on tobacco for 1913 was $1,403,665.20, for 1914, $1,679,714.57.

UTAH

State-Wide Clean-Up Contest.—The Utah Development League is conducting a clean-up contest among the various cities of the state. The scoring is to begin the week of August 17 and will be on fourteen different points. The league sends public speakers to local committees to arouse interest, when desired.

Building Out-Door Tuberculosis Ward.—An open-air tuberculosis ward has been conducted during the summer on the roof of the Salt Lake County Hospital. A tent colony was established with fourteen patients. The experiment has proved so successful that the county commissioners have voted to erect a large wooden building on the plan of a portable summer house, to replace the tents, the upper portions being open and screened but equipped with windows to be raised or lowered as desired. The building is to be constructed as soon as possible.

VIRGINIA

State Board of Health Appointments.—Governor Stuart has appointed the following members of the State Board of Health: first district, Dr. Samuel W. Hobson, Newport News; second district, Dr. Otho C. Wright, Jarratt; eighth district, Dr. William M. Smith, Alexandria.

WASHINGTON

Personal.—Dr. Deshler F. Sells, Spokane, has been reappointed county physician.——Dr. Frank C. Robinson has been appointed temporary physician of the Walla Walla prison, vice Dr. Lawrence R. Quilliam, resigned.

Prohibition of Street Sale of Ice-Cream and Soft Drinks.—After investigating the conditions under which ice-cream and soft drinks are sold by street venders, Dr. John S. McBride, health commissioner of Seattle, has prohibited all such sales, except those of soft drinks in bottles.

WEST VIRGINIA

Honor Veteran Physician.—Over a hundred persons of Moundsville and surrounding towns united recently in giving a banquet in honor of Dr. George W. Bruce, on the occasion of his eighty-seventh birthday. Dr. Bruce has been practicing in West Virginia for sixty-five years.

WISCONSIN

Public Comfort Stations to be Established.—As a result of a survey of Milwaukee, made by Health Commissioner Ruhland to determine the need of the establishment of public comfort stations, Dr. Ruhland has recommended the establishment of fifteen stations at various points throughout the city.

Medical Inspection in Fond du Lac.—Final measures are being taken to provide for the medical inspection of the public schools of Fond du Lac. Information is now being secured concerning methods used in other cities, and the local medical society will take steps to provide physicians for this important work.

Milk Ordinances Won by Milwaukee Health Department.—The last opposition to the efforts of Health Commissioner George C. Ruhland to enforce the ordinance for the tuberculin test of milk in Milwaukee was overcome at the last meeting of the common council judiciary committee, and an ordinance was submitted by Alderman W. C. Wehe which provides not only for the tuberculin testing of all cattle producing milk for use in Milwaukee, but also requires pasteurization. The ordinance has been referred to the city attorney by a vote of three to two. This action kills the ordinance introduced to provide for the pasteurization as an alternative for the tuberculin testing, and gives the Health Department a free hand for the enforcing of the tuberculin ordinance.

Conference of Health Officers.—Over seven hundred health officers of the cities, towns and villages of Wisconsin convened recently in the capitol to consider questions of disease prevention. Dr. Cornelius A. Harper of the State Board of Health presided. One of the subjects which received considerable attention was that of the milk-supply and its relation to tuberculosis, the assembly being almost unanimously of the opinion that this disease might be contracted by the use of contaminated milk. The subject of trachoma was treated by Surgeon Taliaferro Clark, Washington, D. C., of the Public Health Service. The whole-time health officers were generally approved especially in their work in the towns of Milwaukee and La Crosse. Rural sanitation and the relation of health officers to infant mortality had conspicuous places in the valuable discussion.

GENERAL

Trachoma in the Carolinas.—The Public Health Service following up its work in Kentucky, West Virginia and Virginia, has made a trachoma survey in the mountain sections of North and South Carolina. In the report of Surg. Albert D. Foster in *Public Health Reports* July 10, 1914, the results of this work are given. It was found that trachoma exists in North Carolina in three different localities, although the disease is not widespread. At Cherokee, N. C., measures had already been taken to determine the presence of the disease and to control its spread. Foreign immigration was not found to be a factor in the introduction of the disease. The negro race in the two Carolinas is practically free from the disease.

The Plague Situation.—Up to time of going to press of The Journal for July 25, there had been reported seven cases of plague in New Orleans. Since that date, six additional cases have been discovered. Case 8 is that of C. J. Seaman, white, a man 28 years old, who lived at 2845 Baronne Street, and worked in a clothing store at 629 Canal Street, between Exchange and Royal. He sickened July 16, with a left femoral bubo and was removed to the Isolation Hospital, July 20. Case 9 is that of Regina Schmitt, white, a German woman, aged 73. She is a grandmother to Helen Soell, Case 6. She sickened July 20 and was seen July 21. Death occurred July 23, and the diagnosis was confirmed at necropsy. Case 10 was William Ernst, a white man aged 50, who lived at 4528 Constance Street and worked in a saloon at Lafayette and Fulton Streets. Case 11 was that of Joseph Schmitt, a white male aged 41. He worked as janitor at 532 Camp Street, whence came also human cases 6 and 9. He sickened July 24. Case 12 was Joseph C. Williams, a colored male aged 24, residing at 1523 Arts Street, and working at 611 Commerce Street, between Lafayette and Girod Streets. He sickened July 23 with right femoral and inguinal buboes. Case 13 was Rosie Southern, a colored girl aged 16, residing at 1800 Bienville Street and who does housework at 1904 Bienville Street. She sickened July 22. There have been four deaths in the thirteen reported cases.

The following table shows the addresses from which rodent cases have been taken. Over 9,000 rats have been examined:

Case No.	Address	Date
1	1904 Magazine Street	July 16, 1914
2	Burgundy Street	" 16, "
3	1529 Religious Street	" 16, "
4	525 So. Peters Avenue	" 17, "
5	424 So. Rampart Street	" 17, "
6	Dumain St. Wharf	" 21, "
7	819 Antonine Street	" 22, "
8	511 St. Ann Street	" 24, "
9	1531 Magazine Street	" 25, "
10	117 North Liberty St.	" 26, "
11	1171 Annunciation St.	" 26, "
12	518 Barracks Street	" 26, "
13	Stuyvesant Docks	" 27, "
14	1823 Second Street	" 27,

The fight against the plague is continuing, and practically every measure known for securing wide publicity in education has been taken. The various ordinances previously reported have passed the committee of the Board of Health, and there is every indication of their final passage. Display cards are being used in the street-cars, and in moving-picture shows. Garbage collection service has been improved and permanent incinerators have been ordered.

Addresses have been made this week before the following bodies: Hotel and Restaurant Men's Association; Y. W. C. A.; White Long Shoremen's Union; Master Bakers; Transportation interests; LaSalle School; Brewery Workers; New Orleans Funeral Directors' Association, Street Car Employees, New Orleans policemen, and various other bodies.

Outgoing maritime quarantine stations have been established at West End and Spanish Fort for the purpose of fumigating vessels from Old and New Basins.

Inspection of overland outgoing freight has been very greatly increased and covers about two thousand cars per week. All cars are first inspected to determine whether or not they are rat-free and rat-proof, all freight is inspected and that which is packed in such a manner as to harbor rats is repacked. Freight is loaded under the direction of an inspector, the car is sealed with a lead seal bearing the government mark and the car is labelled to show that it has been inspected and passed.

The following is a copy of an order issued by the superintendent of schools:

TO JANITORS:

All trash accumulated in or under school buildings, in yards or janitors' lodges must be collected and burned.

Piles of lumber or old desks must be raised two feet from floor or ground. Metal garbage cans must be in good condition and kept tightly covered at all times.

Rat traps to be baited with a small piece of bacon, the bacon to be tied on. Place traps near rat holes, and in places where rats come and go in their nightly excursions for food. Traps must be visited morning and evening.

When rats are caught, pour kerosene over the rat to kill the fleas. Wrap body of rat in paper with tag attached thereto giving date on which rat is caught, name and location of school, and bring to Headquarters, Marine Hospital Service, 163 University Place.

The above instructions are given by authority of the Board of Directors of New Orleans Public Schools.

Edmund Moss, M.D., Medical Director.

The school authorities have 1,000 traps set in various parts of the city.

The overland freight inspection service has been placed in charge of Acting Assistant Surgeon Oscar Salomon of the Public Health Service. Acting Surgeon Fred Turney has been added to the oversea outgoing quarantine service. Passed Assistant Surgeon Hugh DeValin has reported for duty and has been assigned to Sanitary District No. 4, bounded by Canal, Claiborne, Elysian Fields and the River. Acting Assistant Surgeon H. McG. Stewart has reported for duty and has been assigned to the inspection of outgoing waterborne freight. United States quarantine steamer *Neptune* arrived in New Orleans July 27, in command of Passed Assistant Surgeon Norman Roberts, and was assigned to disinfection of outgoing vessels by the carbon-monoxid method. More than 320 men are now on the pay-roll of the Public Health Service and engaged in New Orleans.

On July 24, the city of Shreveport, La., placed a restricted quarantine on freight and passengers from New Orleans.

Posters have been prepared of which the following is a copy:

Fasten this up in your kitchen. To make New Orleans the city sanitary get rid of rats by taking away their food supply. Kitchen rules: Keep all supplies in rat proof bins. Keep meats in safes or in refrigerators. Keep uncooked vegetables in crates or shelves. If cooking is done with wood or coal fire, burn all garbage as fast as it is created. Put only small amounts into the fire at one time. If cooking is done with a gas fire, keep all garbage in water tight, metal garbage cans or buy a gas incinerator. Keep the cover on the garbage can. Clean your premises now and keep your premises clean. United States Public Health Service, W. C. Rucker, Asst. Surgeon General, Commanding.

CANADA

Personal.—Dr. Herbert A. Bruce is returning to Toronto from a trip to England.——Dr. John L. Chabot, M. P., Ottawa, has sailed for Europe. Dr. Chabot is likely to be appointed a member of the Canadian Senate.——Dr. Edith Brown, the founder and principal of the Women's Christian Medical College, Ludhiana, India, is on a visit to Toronto, the guest of Dr. Margaret Patterson.

University News.—Dr. Donald A. Campbell, Halifax, N. S., sometime professor of medicine in the medical department of Dalhousie University, has intimated to the governors of that institution that he will provide $60,000 to endow a chair of anatomy in memory of his son, the late Dr. George Campbell, who some ten years ago fell a victim to pneumonia while away on his wedding tour.——Again the governors of the University of Toronto have approached the provincial treasurer, stating that their requirements in the near future will be $1,500,000. The increasing deficit in the maintenance account, which is now nearly $130,000, including the estimates for 1914-15, was fully discussed with the treasurer. An urgent request was also preferred for an immediate grant of $200,000 for new gymnasium and athletic equipment.——More new regulations will become effective this coming session at McGill University, Montreal. The age limit of 17 years for entrance to any department has been reduced to 16 years. A student will only be allowed to miss three-quarters of a session's lectures instead of seven-eighths as formerly, except under a physician's certificate for illness.

Fee-Splitting and the Ontario Medical Association.—One year ago the Ontario Medical Association appointed a special committee on this subject, consisting of Drs. Harry B. Anderson, Frederick N. G. Starr and the general secretary, Dr. F. Arnold Clarkson, all of Toronto, to inquire into the whole subject as it affected the medical profession of Ontario, and to report at the meeting just held in Toronto. They brought in a report the substance of which is as follows: that such practices are unfair to the large majority of the profession; that they are inimical to the recipients as they mostly mean the receiving of payment in an underhand way; that they are not in the best interests of the patient, whose welfare should be of first importance; that there should be an educational compaign to teach the public that the physician who makes the diagnosis should be adequately paid for his services; that the surgeon should make no visits except those consistent with the case after the operation and that the physician's duties should not be minimized nor the operation over-estimated; that in fixing his fees the surgeon should consider the ability of the patient subsequently to pay the physician; that a standing committee of the association should be in existence to consider matters of this character from time to time with a view to safeguarding both the interest of the public and the profession.

LONDON LETTER

London, July 17, 1914.

A Leper Home

In his will the late Lord Strathcona has left $25,000 to Mr. John Burns, president of the Board of Trade, for the provision of a home and the maintenance of fifty lepers. The number of lepers in England is estimated at about twenty. The money is now invested in trust administered by private persons who conduct a home or refuge where the identity of the lepers is kept strictly private in order to avoid criticism. Its existence accordingly is known to very few persons. There appears to be no danger whatever of contagion.

Sir William Osler on the Control of Tuberculosis

In an address at the annual conference of the National Association for the Prevention of Consumption, Osler said that the tuberculous might be divided into three classes: (1) persons who have somewhere a small area of tuberculosis (90 per cent. of all persons); (2) those in whom the disease is active enough to produce symptoms, but in whom there is the possibility of arrest or cure, with restoration to working health, and (3) those who are doomed; in whom the disease progresses week by week, month by month, and year by year, and in whom from one year up to five sees the end. When the workers had a living wage, when the house became a home, when the nation spent in food what it now spent in drink, then there would be millions practically immune, continued Osler. There were three essentials in the cure—education, control and rigid regimen. As there was room for only one-third of the present cases in sanatoriums, much must be done in the homes. The splendid efforts of officers of public health had in fifty years cut in half the mortality from tuberculosis. They had tracked the enemy and knew his every stronghold and they knew his three allies, poverty, bad housing and drink. But the disease remained the most powerful among man's innumerable enemies. Before them was a long, slow hundred years' war, or even longer, in which coordination, cooperation and enterprise would win just as surely as it had done against typhus and typhoid.

Sir Clifford Allbutt on the Medicine of the Future.

In distributing prizes at St. Thomas' Hospital, Sir Clifford Allbutt said that he was glad to see that the young men were still like a pack of hounds following a breast-high scent in full dash after the subtle quarry of truth. It was a great joy to all those of the older generation to feel that the splendid results of the last half century would be carried forward even more brilliantly by the great men of the rising generations. The advance was largely due to that anal reason known as science. It would not, however, be all the best if the men of science had had it all their own w Practical men said that there was something very mu more in practice than scientific and analytic knowledge. W was it that the practical man had so much contempt f the young men who came from the training-schools? Th fact was that in the art of medicine there was somethin much more than science could give. The training of the hand and eye gave a certain facility and power that could not be obtained by any amount of school training. The young man was apt to look on the older practitioners as duffers, but the young and the old were necessary to each other. Even in the laboratory the skilled technical hand knew that he could do more by his own instinct than one who had only a theoretic training. The practical men were, however, under the disadvantage that they had no grip of principle. Their mind was not flexible; it was all right for the work of to-day, but not for the work of to-morrow. Small revolutions in practice meant the scrapping of old methods.

SPECIALIZATION IN MEDICINE

There was now no lack of men who were going out into general practice into the towns and villages. That would lift up the whole scheme of general practice. Much more than this, however, was wanted, especially in the specialties of medicine. The only possible outcome of the present tendency could be that foreshadowed in the recent budget, which contained a scheme for establishing in such available centers as the country town special departments where the panel (insurance) practitioner should have it in his power to command any specialist services that he needed. That would lift English medicine to a level that it had never yet attained. The time of medicine was coming. With the scientific centers to exhilarate the practitioners, medicine would be seen reaching the social value and social consideration it so thoroughly deserved. A great career was thus opened to a man, both in general practice and in medical science. Cambridge had been the first place in this country to establish a research hospital. The Committee of National Research was setting up another, while St. Thomas' Hospital was bringing into existence what would be the second research hospital in the country. In conclusion Sir Clifford Allbutt spoke of the need of establishing a minist of health, an office for which he had insisted ever since h had spoken in public and which the Chancellor of the Exchequer had the other day said was necessary. There was a need, too, for a study of comparative medicine. Medicine was to-day in the position occupied by astronomy in the days before Copernicus. Everything was centered in man-medicine, whereas, if great progress was to be made, the medicine of the gooseberry-bush should be studied.

Investigation of Mumps

A report by Dr. M. H. Gordon of the Local Government Board on an experimental investigation in relation to mumps or epidemic parotitis has been issued. During the twenty years, 1891-1910, the annual mortality from mumps in England and Wales varied from a minimum of 54 in 1895 to a maximum of 118 in 1907; and during the last ten of these years the death-rate was constant at about 3 per million living. The recorded deaths from mumps were practically equal for the two sexes. The disease was most fatal in children under 5, especially in infants under 1 year of age, and least fatal between the ages of 15 and 25. On comparing the number of deaths from mumps before and after 5, in the two sexes, respectively, a remarkable difference is seen. Whereas 50 per cent. of the total male deaths took place in children under 5, only about 37 per cent. of the female deaths occurred within the first lustrum, equalization being effected by a relatively higher mortality among females between 55 and 75 years of age. Ten monkeys were inoculated with filtrates taken from ten cases of mumps; four died, one developed an illness from which it recovered, and five appeared to be unaffected. To obtain the material for these experiments, patients with mumps in the acute stage gargled thoroughly about 100 c.c. of a sterile 0.9 per cent. salt solution. The mixture of saliva and saline was passed through a Berkefeld filter, and this filtrate was injected into the monkeys. The experiments seem to justify the view that in a proportion of cases of mumps a virus occurs in the saliva that passes through a Berkefeld filter, and is capable of producing in the monkey by intracerebral injection a lymphocytic meningitis together with hyperemia of the central nervous system and acute degenerative changes in a proportion of the neurons. Furthermore, if the animal lives long enough, acute interstitial parotitis may be produced. It would thus appear that mumps is due to an ultramicroscopic virus comparable to that of poliomyelitis, small-pox, typhus and a number of other acute specific fevers.

PARIS LETTER

PARIS, July 10, 1914.

The Sixth French Conference on Public Assistance

The sixth national conference on public and private assistance has just taken place at Montpellier, under the presidency of M. Emile Loubet, former president of the French republic. The question of most importance was that of the assistance of physically abnormal infants. The meeting voted that the government should enact the most rigorous measures against alcoholism, that prolific producer of psychically abnormal, feeble-minded and delinquent children; that it should complete and perfect the existing laws regarding those psychically abnormal, especially the laws of June 28, 1903, on intractable and vicious wards of the Assistance publique; that of April 15, 1909, on the creation of classes of correction, to be affiliated with the elementary public schools, and autonomous schools of correction for feeble-minded children; and that of July 22, 1912, on courts for children and adolescents, giving the courts the obligatory character which they lack, particularly from the point of view of the creation of necessary establishments and medical examinations of young delinquents, and reuniting them all under a juvenile code, to facilitate their combined action.

As regards the physically abnormal children, the congress asked that the administration encourage the work which the Association orthopédique scolaire française is pursuing: the special annual examination, with a view to hunting out physical deformities. Special classes for teaching children with physical infirmities should be established, nor should such children be allowed to attend schools.

On the motion of M. Chausse, professor at the Faculté de droit de Montpellier, the meeting asked that the law should place a heavy fine on condidates for charity who misstate their resources by false declarations, and that the sentences in these cases be given an effectual publicity.

Personal

At its meeting, July 7, the Académie de médecine elected an honorary member, Dr. Menetrier, in the section of pathologic anatomy, to replace Dr. Empis, deceased. Pierre-Eugène Menetrier was born in 1859 and received his doctorate in 1887. He was successively head of the chemical department of the medical clinic of the Pitié, of the anatomic department of the same clinic, and of clinical medicine; he was named *agrégé* at the Faculté de médecine de Paris in 1892, and physician to the hospitals of Paris in 1894. His best work was given to research in pathologic anatomy, and, more specifically, to the study of tumors. He framed the chapter on "Tumors" for Bouchard's *Traité de pathologic générale*, and his book on cancer made part of the *Traité de médecine*, edited by Gilbert and Thoinot. In collaboration with Pierre Delbet and Dr. Herrenschmidt, he presented a classification and an international nomenclature of cancerous tumors at the Second International Conference for the Study of Cancer (THE JOURNAL, Oct. 29, 1910, p. 1568, and Feb. 11, 1911, p. 437).

Dr. Pinard, professor of clinical obstetrics at the Faculté de médecine de Paris, has retired.

The recently incorporated cabinet includes two physicians among its members: Dr. Augagneur, deputy, former professor of the clinics of cutaneous and syphilitic diseases at the Faculte de médecine de Lyon, former governor of Madagascar, was elected minister of public instruction and the fine arts; and Dr. Cauthier, senator, is in the department of marines.

Death of Dr. Duguet

Dr. Jean-Baptiste Duguet, *agrégé libre* at the Faculté de médecine de Paris, has just died, aged 77. He was a clinician of the old school, who, while accepting the progress brought by the introduction of laboratories, always preferred the clinical examination from the diagnostic point of view. Beside his work on pultaceous and ulcerous anginas and on the treatment of certain forms of goiter by the interstitial injection of tincture of iodin, we are indebted to him for his demonstration of the parasitic nature of "blue spots," formerly considered characteristic of typhoid fever.

The French Anti-Opium League

From the cosmopolitan ports of the Mediterranean, opium has reached France, and opium-dens abound to-day as much in our military stations, where they are the gravest peril that the young marines must face, as in the large centers. The danger seems grave enough to make the consideration of means of fighting it imperative, and a league has been formed for this purpose, with Dr. Charles Richet, professor at the Faculté de médecine de Paris, and M. Le Myre de Vilers, former governor-general of Cochin China, as honorary presidents. The league will endeavor with all its strength to obtain the discontinuance of the opium traffic. It asks, moreover, for most effective injunctions against drug-dealers of all sorts who swarm in the metropolis, and states that light fines do not hinder them from repeating the offense. The league purposes by conferences and tracts to put public sentiment on guard against the danger of the use of stupefacients, such as opium, cocain, hashish, etc.

BERLIN LETTER

BERLIN, July 11, 1914.

Proposed Board of Public Health for Berlin

Since it has been shown, as was to be expected, that the health officer, the Stadtmedizinalrat, who was appointed about a year ago, found the duties which the city of Berlin demands of its chief medical officer too exacting, the city government is contemplating the appointment of a number of assistants so as to form a board of health. Such an office, which corresponds somewhat to the local boards of health in large cities in the United States, is not known in Germany at present except in Hamburg. There to be sure it has not merely a municipal character sinc Hamburg is one of the German federal states. The board of health, therefore, constitutes in Hamburg the highest national authority on matters affecting the health of the public at large. The foundation which the city government has worked out for this department shows what a large field is included in the public hygiene of the city of Berlin, namely, water-supply and drainage, school hygiene and the medical care of the poor, the hygienic care of orphans, the insane, the control of epidemics and much else. The hospitals are included in another department. There is little doubt that if the Board of Health performs its functions successfully, the hospitals and other medical institutions, which so far have not been put under the health officer, will be included in this department, and so finally the centralization of the Berlin public health service, which has been demanded by physicians for many years, will be attained.

Boarding Out the Insane in Families

The introduction of insane persons into families under medical supervision is a form of public care which has become quite general in Europe of late. In the Berlin Insane Asylum at Dalldorf it was introduced soon after the opening of the institution under the direction of Privy Councilor Sander. Dr. Paul Bernard, an attending physician at Dalldorf, recently discussed this method in the Society for Social

Medicine, Hygiene and Medical Statistics but confined himself in his address to the method as applied to insane women.

With about 165 men and 158 women in 1913 thus boarded out in families, Dalldorf probably takes the lead in this respect among all German insane asylums. Under all circumstances acute psychoses and patients with serious delusions, conditions of excitement and habitual criminals are excluded from this form of care. It is suited for those who have become quiet and harmless but are moderately confused and are no longer in need of institutional care, the higher idiots and senile cases that are not yet decrepit. Also convalescents after acute mental disturbance who cannot yet maintain themselves independently and those cases in which the attempt is made to secure improvement by the transition to conditions of greater freedom are also included in this class. A notable institution was established two years ago by Moeli at Herzberge, which consisted in a station for advice for discharged mental cases who are given both advice and actual assistance.

The selection of the boarding-out home is a very difficult and responsible matter; the majority of homes available are totally unsuitable. Thorough investigation which must be verified personally by the attending physician, must precede the assignment of a patient. The majority of the homes are found in Berlin and Charlottenburg. A fifth of the female wards are placed in private asylums, a third in the care of their own family or with relatives. Often these places prove to be inferior because in the selection account must be taken of the kinship. In general the value of a home is in the reverse relation to the rent of the house; the nearer to the center of the city and to the aristocratic districts, the less it is adapted for this purpose.

The best caretakers are quiet people of kindly dispositions who are grateful if they find a companion in the person for whom they are caring and can pay their rent with the board money. It is at most $7.50 (30 marks). A contract is made between the caretaker and the directors of the asylum. The boarded-out wards are visited by attending physicians as often as necessary and receive treatment in case of sickness if the district physician for the poor does not attend. Twice a month the wards with their caretakers present themselves at Dalldorf. Frequently the asylum is imposed on as the caretakers do not keep the insane ward at their own house but have them cared for by others. Often indeed it is the relatives, as has been shown by many instances, who treat their wards in this way. Sometimes also the female wards get married, and still more frequently, unfortunately, illegitimate pregnancy occurs in weak-minded young women if they are not entirely crippled and repulsive.

The boarding-out system occasionally permits a patient without friends to work her own sewing machine and become capable of earning something under the protection of the asylum. Most of the wards are not employed on account of physical disability. On the other hand, a large number especially the wards in private asylums are occupied to a slight extent in household duties. Many knit stockings for the asylum and so earn a few pennies. Five help the caretakers in commercial work on the sewing machine. Six female wards took care of the poultry and one milked the cow. Although this patient was entirely imbecile and needed constant oversight, yet the private asylum kept her without charge, for milkmaids are rare articles in Berlin. Four went out to mend or to sew; one went out sewing on her own account. To balance off a fairly competent working ward, it is often feasible for the private institutions to take a helpless imbecile as compensation. The private institution is fully equipped and licensed to enforce the strict regulations of the government but in this way can utilize space which is not required for patients.

A third of the female patients had to be taken back into the asylum again. These were not the patients who really needed no care but only assistance. They were those who seemed well on superficial acquaintance although their uncertainty and liability to relapse were known to the asylum. This class includes certain patients who suffer from periodic mania or periodic melancholia, on whom the experiment is always being made again to determine whether this isolated stage of the disease is past. Also physical diseases which last a long time make a return to the asylum necessary.

To determine by figures the success of this system of care in families with reference to the recovery of economic independence is difficult on account of the fluctuation of the population in a large city. However, in several cases, it has been possible to render self-supporting some who passed many years of their youth in the asylum and then were placed under care outside.

Marriages

P. A. Surg. Robert Cathcart Ransdell, U. S. N., Washington, D. C., to Miss Dorothy Abbott Layman of Indianapolis, Ind., in New York City, July 15.

James Malcolm Thompson, M.D., Los Molinos, Cal., to Miss Maud Le N. de Bretteville of Lihue, Kauai, T. H., at San Francisco, July 8.

Francis Berger Trudeau, M.D., Saranac Lake, N. Y., to Miss Eleanor Helen Garretson of Morristown, N. J., July 8.

William O. Deyer, M.D., Marshfield, Wis., to Miss Nettie Nickerson of Oxford, Wis., at Stevens Point, Wis., May 30.

Paul Henry Anthony, M.D., Morris, Ill., to Miss Mary Wendolyn Fitzgerald of Chicago, at Chicago, June 30.

Harry William Bagenstose, M.D., West Reading, Pa., to Miss Margaret E. Foster of Camden, N. J., recently.

J. Kersey Davis, Conshohocken, Pa., to Ida Z. Anderson, M.D., of Phoenixville, Pa., in New York, recently.

George Emerson Baker, M.D., Odell, Ind., to Miss Alice Corbin of Louisville, Ky., at Trimble, Ky., July 3.

Harry Melchoir, M.D., College Point, N. Y., to Miss Catherine Manigan of Brooklyn, N. Y., recently.

William P. Buffum, M.D., Boston, Mass., to Miss Constance Arnold of Providence, R. I., July 29.

Logan Clendening, M.D., Kansas City, Mo., to Miss Dorothy Hixon of La Crosse, Wis., July 22.

Walker Haliburton Powe, M.D., to Miss Helen Dunbar Mauldin, both of Greenville, N. C., June 30.

Albert Smilie Hague, M.D., Fairfield, Ia., to Miss Pearl Wire of Kinsley, Kan., at Kinsley, July 6.

Charles Robert Blake, M.D., Dillon, Mont., to Miss Elizabeth Groeneveld of Butte, Mont., recently.

Herbert F. True, M.D., Los Angeles, Cal., to Miss Ruth Arnold of Long Beach, Cal., July 15.

Walter Cary, M.D., Cleveland, Ohio, to Miss Laura Latner of Dubuque, Ia., July 6.

Clyde William Bice, M.D., Ritzville, Wash., to Miss Wolfe of Iowa, at Vancouver, recently.

Clarence W. Cook, M.D., to Miss Carrie Stallard, both of Los Angeles, Cal., June 27.

Deaths

Augustus Barton Knowlton, M.D. Medical College of the State of South Carolina, Charleston, 1893; a Fellow of the American Medical Association; formerly president of the Columbia Medical Society, and vice-president of the South Carolina and Tri-State Medical Societies; founder of the Knowlton Hospital, Columbia, S. C.; died at his home in that city, aged 46.

Henry Clay Eno, M.D. College of Physicians and Surgeons in the City of New York, 1864; a specialist in diseases of the eye and ear; formerly attending surgeon at the New York Eye and Ear Infirmary; a member of the Medical Society of the State of New York; died at his home in New York City, July 16, aged 74.

Albert Ferdinand Boretti, M.D. Harvard Medical School, 1911; a Fellow of the American Medical Association; head of the department of pathology and bacteriology at Marquette University School of Medicine; aged 29; died at a hospital in Milwaukee, July 13, after an operation.

John B. Armstead, M.D. Kansas Medical College, Topeka, 1900; a Fellow of the American Medical Association and of the Kansas Medical Society; formerly of Winchester, Kan.; district surgeon for the Union Pacific Railroad; died at his home in Topeka, Kan., July 9, aged 36.

William Edward Howard, M.D. St. Louis College of Physicians and Surgeons, 1890; Bellevue Hospital Medical College, 1898; of Ohio, Ill.; a Fellow of the American Medical Association; was instantly killed by the overturning of his automobile, May 20, aged 49.

Benjamin Moody, M.D. Geneva, N. Y., Medical College, 1868; Jefferson Medical College, 1869; a veteran of the Civil War; and a well-known practitioner of Mansfield, Pa.; died at his home in that place. June 24, aged 73.

Henry Kremers, M.D. University of Michigan, Ann Arbor, 1876; a Fellow of the American Medical Association; for thirty-two years a practitioner of Holland, Mich., and formerly mayor of that place; died at his home in Holland, July 15, from nephritis, aged 64.

Joseph Warren Hilliers, M.D. University of Pennsylvania, Philadelphia, 1860; a member of the Medical Society of the State of Pennsylvania; for more than fifty years a practitioner of West Middlesex, Pa.; died at his home in that place, recently, aged 75.

Edward Wilson, M.D. Hahnemann Medical College, Chicago, 1897; hospital steward of the Eleventh Michigan Infantry during the Civil War; and a resident of Elmhall, Mich., for forty-three years; died at his home in that place, July 9, aged 84.

Clement A. Jennings, M.D. University of Pennsylvania, Philadelphia, 1857; a member of the Missouri State Medical Association; for more than thirty years a practitioner of Salisbury, Mo.; died at his home in that place, June 9, aged 76.

James J. Knott, M.D. Atlanta, Ga., Medical College, 1859; said to have been the youngest surgeon in the Confederate service during the Civil War; for nearly half a century a practitioner of Atlanta, Ga.; died at his home in that city, July 12.

Sheldon Fitch Davis, M.D. State University of Iowa, Homeopathic Department, 1879; a Fellow of the American Medical Association and of the Southern California Medical Society; died at his home in Pomona, Cal., June 28, aged 60.

Rufus Pitts, M.D. University of the South, Sewanee, Tenn., 1901; for several years secretary of the Rutherford County Medical Society; died recently at his home in Murfreesboro, Tenn., from suppurative disease of the lungs, aged 40.

Lemuel Conant Grosvenor, M.D. Homeopathic Hospital College, Cleveland, 1864; for thirty-seven years a practitioner of Chicago, and for seven years a resident of Taunton, Mass.; died at his home in the latter place, July 17, aged 82.

James Orrin Emmett, M.D. New York Homeopathic Medical College and Flower Hospital, 1865; for nearly half a century a practitioner of Fonthill, Ont.; died at his home in that place, April 30, from heart disease, aged 71.

William Edward Magruder, M.D. University of Maryland, Baltimore, 1854; a member of the Medical and Chirurgical Faculty of Maryland; died at his home in Sandy Spring, Md., July 13, from cerebral hemorrhage, aged 80.

William Dee Bollinger, M.D. Homeopathic Medical College of Pennsylvania, Philadelphia, 1867; for forty-five years a practitioner of Lancaster, Pa.; a veteran of the Civil War; died at his home in Lancaster, Pa., July 13.

Joseph Van Kirk, M.D. Jefferson Medical College, 1891; a member of the Medical Society of the State of Pennsylvania; of Elizabeth, Pa.; died at Uniontown, Pa., June 18, aged 44.

Aaron Herring, M.D. Ensworth Medical Collegee, 1890; a member of the Kansas Medical Society; formerly of Highland Station, Kan.; died at his home in Sparks, Kan., July 9, aged 61.

John Mason Brown, M.D. University of Buffalo, 1864; for more than thirty years a resident of Westfield, N. Y.; died at his home in that place, July 12, from the effects of a fall, aged 72.

John Wing Brown, M.D. University of Michigan, Ann Arbor, 1873; for nearly forty years a practitioner of Skaneateles, N. Y., died at his home in Mottville, N. Y., July 9, aged 62.

Henry William Webner, M.D. Hahnemann Medical College, Philadelphia, 1875; for nearly forty years a practitioner of Baltimore; died at his home in that place, July 14, aged 62.

Atherton B. Stevens, M.D. Jefferson Medical College, 1880; for two terms a member of the state legislature from Wayne County; died at his home in Scranton, Pa., July 11, aged 57.

Caleb Wakefield Clark, M.D. University of Vermont, Burlington, 1889; a member of the Massachusetts Medical Society; died recently at his home in Melrose, Mass., aged 60.

Michael Joseph Ahern, M.D. Laval University, Quebec, Que., 1868; professor of practical anatomy in his Alma Mater; died recently at his home in Quebec, aged 70.

Alexander L. Morris, M.D. University of Tennessee, Nashville, 1883; a practitioner of Gulfport, Miss.; died at his home in that place, July 13, from heart disease, aged 54.

Walker Aylett Hawes, M.D. University of Virginia, Charlottesville, 1866; a Confederate veteran; for many years a practitioner of New York City, but since 1906 a resident of Charlottesville, Va.; died at his home, July 5, aged 74.

John Merritt Lewis, M.D. Bellevue Hospital Medical College, 1880; a Fellow of the American Medical Association; for thirty years a practitioner of Minneapolis, Minn.; died at his home in that city, July 1, from uremia, aged 56.

Mason O. Wert, M.D. Columbus Ohio Medical College, 1878; for twenty-five years a practitioner of Wyandot and Holmes counties, Ohio; died at his country home in Sycamore, July 3, from arteriosclerosis, aged 65.

P. C. Sutphin, M.D. Philadelphia College of Medicine and Surgery, 1850; for many years a practitioner of Canmer, Ky., but recently a resident of Cave City; died at his home, July 6, from senile debility, aged 88.

Carroll Everett Proctor, M.D. Dartmouth Medical School, Hanover, N. H., 1881; from 1894 to 1902 superintendent of schools of Weld, Maine; died at his home in Weld, May 13, from chronic lead poisoning, aged 55.

James C. Rippard, M.D. College of Physicians and Surgeons, Baltimore, Md., 1881; a member of the Medical Association of Georgia; died at his home in Waycross, Ga., July 4, from heart disease, aged 56.

David L. Talkington, M.D. College of Physicians and Surgeons, Baltimore, 1907; died at his home in Jacksonburg, W. Va., May 22, from the effects of poison accidentally self-administered, aged 37.

Samuel Hodgens Ralston, M.D. Western Pennsylvania Medical College, Pittsburgh, 1896; prominent as a dentist of Pittsburgh; died at his home in Avalon, Pittsburgh, July 3, aged 45.

Arthur Francis Eife, M.D. New York Homeopathic Medical College, New York City, 1881; formerly a practitioner of New York City; died at his home in Elmhurst, L. I., July 9, aged 52.

Omer P. Phares, M.D. Starling Medical College, Columbus, Ohio, 1884; formerly of Connersville, Ind.; died at his home in Liberty, Ind., May 26, from cerebral hemorrhage, aged 59.

Harold T. Houg, M.D. Marquette University, Milwaukee, 1910; for two years a member of the faculty of his Alma Mater; died at his home in Racine, Wis., July 6, aged 28.

Knud Martin Teigen, M.D. New York University, New York City, 1882; of Minneapolis; after shooting his wife, shot himself through the head and died, July 4, aged 59.

William McD. Amos, M.D. College of Physicians and Surgeons, Keokuk, Ia.; a pioneer practitioner of Lordsburg, Cal.; died at his home in San Dimas, Cal., July 2, aged 72.

Milan Theron Ward, M.D. Albany, N. Y., Medical College 1894; a Fellow of the American Medical Association; died at his home in Toulon, Ill., July 1, aged 55.

C. E. Kinsey, M.D. Medical College of the State of South Carolina, Charleston, 1877; died at his home in Williams, S. C., July 3, from heart disease, aged 59.

J. W. Montgomery (license, Tennessee, 1889); for more than a quarter of a century a practitioner of Thurman, Tenn.; died at his home, July 2, aged 58.

George S. Morgan, M.D. New York Homeopathic Medical College New York City, 1879; died at his home in New London, Conn., July 5, aged 59.

Shadrach Burton, M.D. Eclectic Medical College of Pennsylvania, Philadelphia, 1871; died at his home in Dallas, Texas, July 6, aged 83.

Landon Aubry Woodson, M.D. Medical College of Virginia, Richmond, 1860; of Coal Valley, Ala.; died in Oakman, Ala., June 11, aged 78.

John H. Redding, M.D. Southern Medical College, Atlanta, Ga., 1881; died at his home Waycross, Ga., July 7, from pneumonia, aged 56.

Edward W. Delcher, Jr., M.D. Kentucky School of Medicine, Louisville, 1891; of Baltimore; died at Shadyside, Md., July 6, aged 51.

James Morris Watson, M.D. New York University, New York City, 1886; died at his home in Falmouth, Mass., June 7, aged 54.

William S. Jones (license, W. Va., years of practice, 1881); died at his home in Central Station, W. Va., May 31, aged 78.

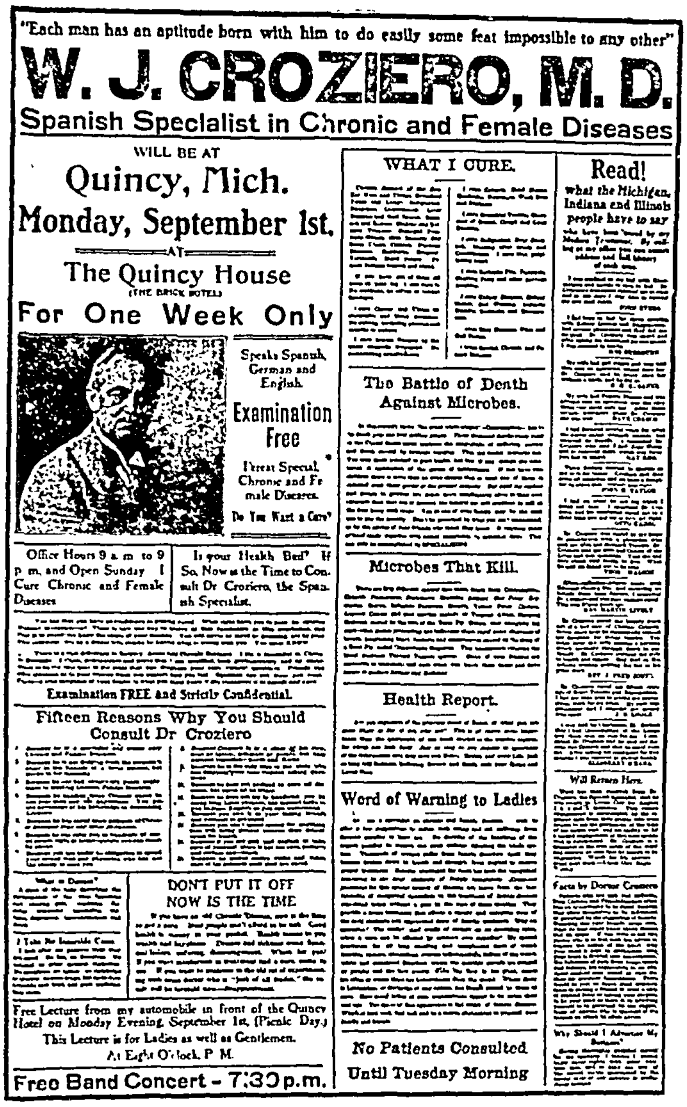
Webster M. Dyas, M.D. Rush Medical College, 1896; died at his home in Arlington Heights, Ill., July 2, aged 52.

The Propaganda for Reform

IN THIS DEPARTMENT APPEAR REPORTS OF THE COUNCIL ON PHARMACY AND CHEMISTRY AND OF THE ASSOCIATION LABORATORY, TOGETHER WITH OTHER MATTER TENDING TO AID INTELLIGENT PRESCRIBING AND TO OPPOSE MEDICAL FRAUD ON THE PUBLIC AND ON THE PROFESSION

W. J. CROZIER—QUACK

A Mount Morris, Ill., physician sends us a full-page advertisement from the *Mount Morris Index*, which we reproduce in miniature. The advertisement is one of a traveling quack, W. J. Crozier, M.D., who calls himself "A Spanish Specialist in Chronic and Female Diseases." The physician who sends the advertisement writes:


"Each man has an aptitude born with him to do easily some feat impossible to any other"

W. J. CROZIERO, M. D.

Spanish Specialist in Chronic and Female Diseases

WILL BE AT

Quincy, Mich.

Monday, September 1st.

AT

The Quincy House

(THE BRICK HOTEL)

For One Week Only

Speaks Spanish, German and English.

Examination Free

I treat Special, Chronic and Female Diseases.

Do You Want a Cure?

Office Hours 9 a. m. to 9 p. m., and Open Sunday. I Cure Chronic and Female Diseases.

Is your Health Bad? If So, Now is the Time to Consult Dr. Croziero, the Spanish Specialist.

Examination FREE and Strictly Confidential.

Fifteen Reasons Why You Should Consult Dr. Croziero

DON'T PUT IT OFF NOW IS THE TIME

Free Lecture from my automobile in front of the Quincy Hotel on Monday Evening, September 1st. (Picnic Day.) This Lecture is for Ladies as well as Gentlemen. At Eight O'clock, P. M.

Free Band Concert - 7:30 p.m.

WHAT I CURE.

The Battle of Death Against Microbes.

Microbes That Kill.

Health Report.

Word of Warning to Ladies

No Patients Consulted Until Tuesday Morning

Read! what the Michigan, Indiana and Illinois people have to say

Will Return Here.

Facts by Doctor Croziero

Why Should I Advertise My Business?

A typical full-page newspaper advertisement of Quack Crozier when he was operating in Michigan. At that time he was going under the name "Croziero." After Michigan was made too hot for him he migrated to Indiana and later to Illinois where he now plys his trade as "CroZier." Size of original 13 in. by 21 in.

"I am enclosing a copy of an advertisement which appeared in our local paper last week. I should like if possible to learn this man's standing in the profession, and whether he is licensed to practice in the State of Illinois.

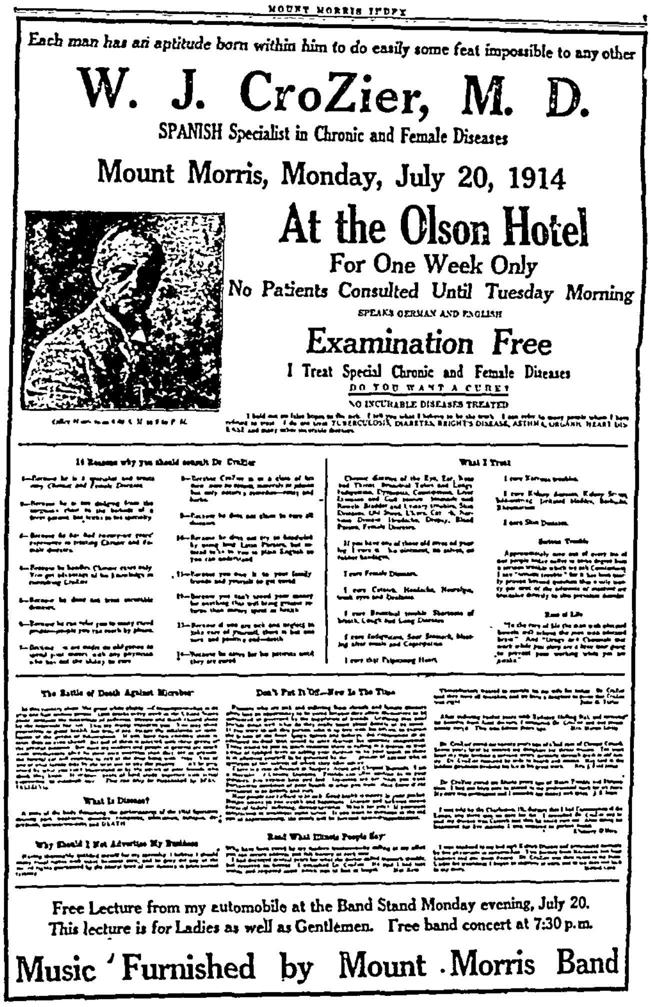
"If you can assist me in this I shall be much obliged."

W. J. Crozier holds a diploma granted by the Missouri Medical College in 1881. In 1888 he received a license to practice in the State of Missouri and, according to the Missouri State Board of Health, at that time stated that he was a native of France. In 1910 he applied for a license to practice in the State of Michigan on the basis of his Missouri license. He applied not as W. J. Crozier but as William J. Croziero and, according to the Michigan State Board of Registration, at the time of his application said that he was born at Evansville, Ill. He is licensed also in Indiana and Illinois.

Of course Crozier's business, like that of all quacks, depends wholly on his ability to find newspapers which are willing to carry his advertisements. Fortunately for the Michigan public, that state has a law that protects, to some extent, the sick from vultures of the Crozier type. In October, 1913, W. J. Crozier, alias W. J. Croziero, was arrested in Paw Paw, Mich., and fined $50 for illegal advertising. The action on the part of the local authorities was due, largely, to the fact that Michigan has a wide-awake secretary on its State Board of Registration.

Finding Michigan too hot for him, Quack Crozier slid over the line into Indiana, in which state he continued his previous tactics. Crozier's method of getting victims is well described in a letter from a Williamstown, Mo., physician.

"He [Croziero] came to this town preceded by full-page advertisements in the weekly newspapers, large posters distributed over the community telling that 'Dr. W. J. Croziero, the Spanish Specialist, would soon visit Williamstown, speaking four languages, having twenty-one diplomas from the largest schools in the United States, Germany and all over the world; able to diagnose any disease without asking the patient a single question,' etc.


MOUNT MORRIS INDEX

Each man has an aptitude born within him to do easily some feat impossible to any other

W. J. CroZier, M. D.

SPANISH Specialist in Chronic and Female Diseases

Mount Morris, Monday, July 20, 1914

At the Olson Hotel

For One Week Only

No Patients Consulted Until Tuesday Morning

SPEAKS GERMAN AND ENGLISH

Examination Free

I Treat Special Chronic and Female Diseases

DO YOU WANT A CURE?

NO INCURABLE DISEASES TREATED

15 Reasons why you should consult Dr. CroZier

What I Treat

The Battle of Death Against Microbes

What Is Disease?

Why Should I Not Advertise My Business

Don't Put It Off—Now Is The Time

Read What Illinois People Say

Free Lecture from my automobile at the Band Stand Monday evening, July 20. This lecture is for Ladies as well as Gentlemen. Free band concert at 7:30 p.m.

Music Furnished by Mount Morris Band

A greatly reduced photographic reproduction of a full-page advertisement of "Crozier" in the Mount Morris (Ill.) *Index*. The original advertisement measured more than one and one-half square feet.

"The first night in town he gave a free lecture, everybody invited. His prices were from $35.00 to $75.00, payment strictly in advance, and if check was given, his wife cashed checks immediately before any medicine was given. Dressed conspicuously, and did everything that you would expect the advertiser to do."

And now, it seems, Michigan, Indiana and Missouri have passed W. J. Crozier, M.D., Spanish Specialist, on to Illinois. In Illinois, Crozier has dropped the final "o" previously tacked on to his name and has capitalized the "z".

Crozier's advertisements are typical of the traveling quack. Lying claims regarding his ability, testimonials, and the usual farrago of nonsense relative to the mysterious methods alleged to be used.

> "I cure Cancer and Ulcers by electricity and blood medicine."
>
> "I cure Epileptic Fits, Paralysis, Shaking Palsey and other nervous troubles."
>
> "I cure Skin Diseases, Boils and Gall Stones."
>
> "I cure Female Diseases by the latest scientific treatment; no embarrassing examinations."
>
> "I cure that palpitating heart."

Here is a testimonial served up to the Mount Morris public, presumably in the hope of catching other victims:

> "I had doctored several years for what the doctor called stomach trouble, but received no benefit. I consulted Dr. Crozier. He said I had tape-worm and removed same, which was 42 feet in length.—Matt. Rem."

Why Crozier left Indiana, we do not know, but we have a theory. Some of the country newspapers in that state that are particular about the class of advertising they carry, wrote to The Journal some months ago asking for information regarding Croziero, who apparently was applying for advertising space. Such information as we had was sent to these publishers. About the same time *Collier's* had something to say about Crozier and added: "Indiana newspapers will do well to think twice before accepting this impostor's advertising."

The amount of advertising space that Crozier purchases makes the acceptance of his advertising "copy" a great temptation to a struggling country newspaper. The Journal's experience has been that the average country newspaper stands for decency and that, when its publisher can be convinced of the evident fraudulence of such individuals as Crozier, he will refuse to sell space to the quack. It is for this reason that The Journal takes the present opportunity of stating definitely:

1. W. J. Crozier, alias W. J. Croziero, is a quack.
2. The claims made by W. J. Crozier, alias W. J. Croziero, are false and fraudulent.
3. The newspaper that has the interest of its readers at heart should give the same short shrift to quacks of the Crozier type that they would give to "thimble riggers," "green goods" artists, "gold brick" dispensers, or any other individuals who make it a business to prey on the community and obtain money under false and fraudulent pretenses.

Correspondence

The Psychic Factors in Aviation

To the Editor:—I have read with some interest the abstract of the article by Loewy and Placzek on this subject (The Journal, July 11, 1914, p. 203). I do not know how much this subject interests the medical profession, but I cannot allow a notice like this to pass without giving my views as a practical aviator.

I have repeatedly flown at heights in excess of 4,000 meters (about 2½ miles). When I won the Tri-State Race going from Boston to Nashua, N. H., to Worcester, Mass., to Providence, R. I., and back to Boston I flew at practically this height during the entire distance.

I have always believed in high flying. I am convinced that it is far less dangerous than flying low. In the first place the vertical air-currents which annoy the aviator at low altitudes have no effect at great heights. The horizontal air-currents, corresponding to the winds on the surface of the earth, have little effect on the machine, as once the aviator is off the ground his speed with respect to the air passing him is constant. His speed with relation to the surface of the earth of course varies with the velocity of the horizontal air-currents.

The parties who made the tests under consideration put themselves in a cabinet with the atmospheric pressure corresponding to that of an altitude of 4,000 meters. Probably neither of them had ever been in the air. They, therefore, imagined all sorts of things that might happen. But let me tell you there is a great difference between two men cooped up in a little cabinet under artificial conditions and the same men flying free through the clear atmosphere at a height of 2 miles. The physiologic conditions may be the same in both cases, so far as the air-pressure is concerned, but the psychologic conditions are entirely different. The former must be depressed by the very nature of the trial, while the latter would be exhilarated in the highest degree.

As a rule, when a person goes into the air for the first time, the earth seems to be falling away from him while he remains stationary. At a height of perhaps half a mile the earth assumes a concave appearance. It is interesting to note that the only way you can tell the difference between woodland and grass is that the latter is lighter in shade than the former. This is no doubt due to the fact that the sunlight is reflected more readily from grass than from dense woods.

The fields in an open country give the appearance of a checker-board stretched out beneath the aviator. At the height of a mile ordinary roads have the appearance of a thin brown thread laid on the surface of the earth. If you happen to look at a railroad so that the rays of the sun are reflected into your eyes, the railroad appears like two piano-wires stretched on the ground.

This recalls an interesting time I experienced in the Tri-State Race mentioned above. The glass roofs of the greenhouses reflected the light into my eyes and I mistook many of these greenhouses for small ponds. A pond reflects the sunlight into the eye just as does the glass roof of a greenhouse. It is almost impossible to tell the difference between a very small pond and a large greenhouse at considerable height when the sun is shining so that the incident rays are reflected into the eyes.

I do not know why, but it seems to be a general impression that an aviator has difficulty in breathing, owing to the high speed of his machine and the rarefaction of the air. This is not the case. I have been with Bruce-Brown at a speed of 109 miles in an automobile on the Florida beach; I have driven my own car at a speed of 86 miles at Atlantic City, and I have been in an aeroplane at the speed of over 150 miles an hour (with the wind of course) and I had no difficulty whatever in breathing in any case. Furthermore, an aeroplane, properly designed, is so constructed that a great deal of this wind is done away with.

I have not found that the rarefaction of the air interferes with breathing, owing, I believe, to the fact that the aviator climbs so slowly that he has plenty of time to get used to the diminished atmospheric pressure. Another point which makes aviation different from mountain-climbing in this regard is that the mountain-climber is exercising and necessarily would notice rarefaction of the air before an aviator would who is sitting still.

In coming down, however, it is a different proposition. If I cut off my engine at a 2-mile height and drop suddenly to a mile from the ground, it seems as if some one were standing behind me and poking red-hot pokers into my ears. I had no difficulty whatever in going up because I went up slowly, but in coming down quickly I did not have time to become accustomed to the rapid change in atmospheric pressure. My usual practice, when I wished to avoid this inconvenience, was to drop a thousand feet as slowly as possible with the power off, turn on the power and circle around at that level, swallowing vigorously. I would then drop another thousand feet. In this way I could get to the ground from a height of 2 miles without any inconvenience.

As far as the rarefied air paralyzing the action of the subjective mind is concerned, I do not think that there is anything in this report. My experience has been that the objective mind, at least, is stimulated by the excitement of rushing through the air at high speed, the great purity of the air at great height, and possibly by the greater actinic power of the sunshine.

I found that I burned very much easier at great height than I did on the ground. This is probably due to the fact that the ultraviolet rays, which are of course the shortest in wave-length, are less reflected by the particles in the air at a height of 2 miles than at the surface of the ground. In other words, the dust-particles intercept these ultraviolet rays, which are of course the most important in affecting the skin.

With regard to the death of Chavez: At Columbus I thought I would do a little grandstand work and drop from the height of a mile straight to the ground as rapidly as possible. I stepped out of the machine with everything swimming before my eyes and just as my foot touched the ground I became unconscious and remained unconscious for five minutes or so. This was no doubt due to the rapidity of my descent and this may have caused Chavez to lose control of his machine when only 100 feet from the ground. This, as I said before, is the only time when an aviator is inconvenienced.

I think my experience is not unusual compared with that of all aviators who fly at all high. The monoplane I used was the French Bleriot with a 70-horse-power Gnome motor. My flying speed was 72 miles an hour, and I could not remain in the air unless I drove my aeroplane at least 60 miles an hour. In five months I made 107 flights, which does not count the flying I did in Europe and while learning. I have also flown the Farman biplane and the Curtis biplane and, hence, my experience has been such as to warrant me in saying that my impressions are probably those of most aviators who have flown at all extensively.

If you think this matter is worth a discussion, I should be glad to answer any inquiries through THE JOURNAL which may be put to me.

EARLE L. OVINGTON, Newton Highlands, Mass.

[COMMENT.—There seems to be a discrepancy between experimental and actual conditions in this matter. Many observations have shown the ability of the body to accomodate itself to much higher altitudes than 2¼ miles. Apparently the difficulty in aviation (as in work in caissons) is, in part at least, due to the suddenness of the changes.—ED.]

"Butter-Fat in Infant Feeding"

To the Editor:—In THE JOURNAL (July 18, 1914, p. 246) occurs an editorial on "Butter-Fat in Infant Feeding," which attributes the discovery of the remarkable influence of butter- and egg-fats on growth as contrasted with certain other fats of both animal and vegetable origin, to Osborne and Mendel. Foot-Note 4 states that McCollum and Davis have also pointed out this property for egg-fat, but makes no other reference to our work on this line. The facts in the case are as follows:

In the *Journal of Biological Chemistry*, 1912, xii, 81, Osborne and Mendel discussed the importance of lipoids in the diet during growth, and concluded that their data demonstrated that all lipoids were dispensable from the diet during growth (p. 88). One year later McCollum and Davis (*Jour. Biol. Chem.*, 1913, xv, 167) described for the first time that rats could grow for from eighty to 120 days on fat-free diets (Osborne and Mendel's experiments covered only sixty days), but invariably growth became suspended. We called attention to the fact that the addition of lard or of olive-oil would not induce a resumption of growth nor would lecithin or choles- terin, but that the addition of either butter-fat or egg-fat to the diet of purified food substances caused a prompt resumption of growth—a thing which never occurred unless fatty substances were added. One month after the appearance of our paper Osborne and Mendel published another paper (*Jour. Biol. Chem.*, 1913, xv, 311), in which they showed that the addition of *unsalted butter* to their "synthetic diet," which was not made up of purified food substances but contained "protein-free milk," would induce growth far longer than the same diet without the butter addition. It was in this paper that they first called attention to the fact that a suspension of growth always took place when a fat-free diet was fed. They admit that their butter contained about 15 per cent. of all the constituents of milk other than the fat, so that the results of their work as reported in this paper cannot be accepted as proof that the renewed growth was the result of the fat or some other constituent of the butter, for Hopkins had already pointed out that almost insignificant amounts of milk added to a diet of purified foodstuffs induced growth, when without it none was attained. It was not until four months after the appearance of our paper that Osborne and Mendel published work with purified butter-fat, fully confirming our own observations (*Jour. Biol. Chem.*, 1913, xvi, 423). They have not added to our results but have fully confirmed them.

I am presenting this history of the case to make it clear that the writer of your editorial has overlooked the actual discovery concerning both butter- and egg-fats, and gives the impression that we have confirmed Osborne and Mendel, whereas the reverse is true. It is a matter of injustice to give this false impression in an editorial of a journal having so wide a circulation among scientific men as does THE JOURNAL. I therefore ask that you request the writer of your editorial carefully to go over the literature cited and verify the statements I have made. I am sending you enclosed a copy of our papers on this subject. I hope you will find an opportunity at an early date to rectify this mistake in your editorial column.

Thanking you for giving this matter your attention, I am,

Yours very truly,

E. V. MCCOLLUM, University of Wisconsin, Madison, Wis.

[COMMENT.—We are glad to add the foregoing comments to supplement and correct the editorial referred to.—ED.]

Queries and Minor Notes

ANONYMOUS COMMUNICATIONS and queries on postal cards will not be noticed. Every letter must contain the writer's name and address, but these will be omitted, on request.

FRUIT ACIDS AND THE BLOOD—TYPHOID VACCINE AND CARRIERS—VERACOLATE A PROPRIETARY NOSTRUM

To the Editor:—1. What is your opinion of the use of fruit acids in the treatment of gouty and rheumatic conditions? Do fruit acids enter the blood or tissues as acids or alkalies?

2. What is your opinion on the use of typhoid vaccine in typhoid carriers?

3. What is your opinion on the use of Veracolates, Marcy Company, Boston, in gall-stone and gall-bladder affections?

4. What is your opinion of ox-bile pills covered with salol in gastric ulcer?

J. W. HOPKINS, M.D., Melrose, Mass.

ANSWER.—1. The fruit acids are neutralized in the intestines, forming salts. Such salts become oxidized in the tissues with the production of carbonates. This is a general statement but it does not apply to tartrates to so great an extent as to the citrate and other salts. The tartrates are not completely oxidized to carbonates and in large doses may exert an unfavorable influence on the kidneys. Fruit acids tend to decrease the alkalinity of the blood temporarily by withdrawing the bases by which they are neutralized. This effect is slight in ordinary cases so that it is commonly but incorrectly considered that the fruit acids are converted into alkaline carbonates. They can become converted into carbonates only by combination with a base and subsequent oxidation. An excess of a fruit acid tends to lower the alkalinity of the blood and to increase the acidity of the urine. The purpose of giving compounds of the fruit acid is to secure the effect of alkalies and this is best obtained by administering not the acids themselves, but their salts. The salts of the ordinary fruit acids are useful whenever it is desired to increase the alkalinity of the blood and dimin- ish the acidity of the urine. Important investigations indi- cate, however, that it is scarcely feasible to produce any marked effect on the alkalinity of the blood in this manner. If the physician believes, as many do, that the alkalinity of the blood is an important factor in the recovery from con- ditions like gout and rheumatism, the administration of the salts of the fruit or vegetable acids is very appropriate if large quantities of tartrates are avoided.

2. Typhoid vaccine is suitable in the treatment of typhoid carriers, although in some obstinate cases it does not prove effective.

3. Veracolate is said to consist of the salts of the essential bile acids, sodium glycocholate and sodium taurocholate with cascara and phenolphthalein. Bile salts have the effect of increasing the secretion of bile. It is very doubtful whether this increase in the secretion of bile is of any special value in the treatment of gall-bladder affections. In any case there is no occasion for a proprietary mixture of the bile salts with fixed quantities of cathartics, as it is perfectly easy for a physician to prescribe such doses of cathartics as a patient needs without giving them in a proprietary mixture in which they will be frequently given when not needed. The advertising literature of Veracolate shows a tendency to extravagant statements which no physician ought to encourage. For instance, the statement is made that "Veracolate is a biliary disinfectant." Slight antiseptic action has been attributed to the bile salts, but there is no warrant for saying that they have disinfectant power.

4. Ox-bile pills may be of service in gastric ulcer if it is desired to increase the flow of bile. They are hardly to be regarded as an important medicament for this condition. The coating of pills with salol is a common practice to prevent the action of the gastric juice. It should be remembered that if the coating exceeds a very thin layer, a large amount of salol may be given.

CONGENITAL ABSENCE OF AN EXTRINSIC OCULAR MUSCLE

To the Editor:—Please inform me if the congenital absence of an ocular muscle (extrinsic) has ever been noted.

WESLEY BISHOP, M.D., Regina, Saskatchewan.

ANSWER.—Although the occurrence of this anomaly is exceedingly rare, it has been observed and reported a number of times. Perhaps the most recent case is that of Mittendorf (*Manhattan Eye, Ear, and Throat Hosp. Rep., February,* 1914), who reports the case of a man aged 52 with a congenital absence of the right inferior rectus, and also the absence of Tenon's capsule over practically the lower portion of the eyeball. The family history in this case is somewhat significant. The patient is the fourth of a family of ten children, among whom four show marked congenital ocular defects. In this case the right eye was in a position of marked sursumvergens, pointing nearly directly upward, so that on elevating the lid, the lower border of the cornea was all that could be seen. During the operation to correct the faulty position of the eyeball, no trace of the inferior rectus tendon could be found. Up to the present time only about fourteen cases of congenital absence of an extrinsic ocular muscle have been reported in ophthalmic literature.

USE OF LEAD AND OPIUM WASH

To the Editor:—1. Why is lead and opium wash used on external surfaces, for sprains, trauma, etc.?

2. Is lead absorbed through the unbroken skin?

3. Is opium absorbed through the unbroken skin?

4. Is the combining of the two drugs attended by the formation of a new compound, which is absorbed through the unbroken skin?

W. S. COZART, M.D., Boston.

ANSWER.—1. The application of lead is thought to allay inflammation.

2. Yes, to some extent.

3. No.

4. There is no new compound formed.

EISENZUCKER

To the Editor:—Please inform me about Eisenzucker. Where can I look up articles or references about it—dose, applicability in children, etc.?

H. TROSSBACH, M.D., Colorado Springs, Colo.

ANSWER.—Eisenzucker or saccharated ferric oxid is official in several pharmacopeias, but not in the United States Pharmacopeia. It consists of a ferric hydroxid made soluble by the addition of sugar and a small amount of sodium hydroxid. It is said to be an efficient ferruginous preparation. The adult dose is 0.6 gm. or 10 grains. This may be dissolved in equal parts of water and syrup.

Typhoid and Tuberculosis.—Antityphoid vaccination has not increased other diseases, but, on the other hand, tuberculosis, the disease suspected of being increased, has decreased in the Army since 1908.—Will Shimer, *Jour. Ind. State Med. Assn.*

Medical Education and State Boards of Registration

RULES GOVERNING DRUGLESS THERAPY IN PENNSYLVANIA

According to a report received from Dr. J. M. Baldy, the Bureau of Medical Education and Licensure has adopted the term "drugless therapy" under which to license certain practitioners of medicine and has defined drugless therapy specially to include the following:

1. Any treatment having the spine for a base, including (a) chiropractic, (b) Napravit, (c) Spondylo-Therapy, (d) Chiropractic Spondylo-Therapy, (e) Neuropathy, (f) Any other treatment having the spine for a base not here specified.

2. Any treatment having the mind for a base. (a) Suggestive Therapeutics, (*b*) Metaphysics, (c) Vita-Therapy, (d) Magnetic Healing, (e) Any other treatment having the mind for a base not here specified.

3. Any system, method, science or art of treatment based on 1 and 2 which is in existence or may come into existence and not already specified under the above-named divisions.

The license issued to those practicing any branch of drugless therapy, will not confer the right to use the title of "Dr." Nor will it authorize the holder to practice pharmacy, dentistry, osteopathy, nor to treat persons sick with quarantinable diseases, nor to practice surgery, midwifery or medicine by the use of drugs administered internally or applied externally.

After July 1, 1914, no person will be admitted into Pennsylvania for the purpose of practicing any form of drugless therapy without having first fulfilled the following requirements:

(A) A preliminary education prior to entering on the study of drugless therapy equal to that required of medical students prior to entering on the study of medicine, these requirements to be passed on by the Bureau of Professional Education of the Department of Public Instruction.

(B) The satisfactory completion, at an approved school, of a course of study consisting of the following:

1. The first two years of study prescribed by the medical schools of this commonwealth excepting those portions relating to materia medica, pharmacy, pharmacology, toxicology and surgery.

2. A third year of study, including hygiene, preventive medicine, sympfomatology, diagnosis, pathology and therapeutics relating to drugless therapy.

3. The satisfactory passing of a licensing examination conducted by the Bureau of Medical Education and Licensure, after having qualified on the requirements of 1 and 2, as well as on character and moral standing.

At the present time there is no school teaching drugless therapy in the United States which can fulfill these requirements. The Bureau of Medical Education and Licensure has, therefore, made arrangement by which students desiring to pursue these courses may obtain the required education in the following institutions:

University of Pennsylvania, Philadelphia.
University of Pittsburgh, Pittsburgh.
Temple University, Philadelphia.
Women's Medical College, Philadelphia.

The following is the method of procedure which must be adopted in order to obtain access to the courses of these schools:

1. The preliminary requirements equal to the medical students admitted to the school chosen must be fully satisfactory to the institution.

2. The applicant desiring to take the course required by the state will apply for admission as a special student to the institution he or she selects, asking the privilege of electing such course as they desire. The courses the applicant must elect are those specified under Section B, Subdivision 1, namely, the full and complete course as given to the medical student with the exception of those branches which are not necessary for the practice of drugless therapy, namely, materia medica, pharmacy, pharmacology, toxicology and surgery.

At the completion of each examination held by the institution, a notification is issued to the applicant that he or she has passed satisfactorily the given examination. These notifications must all be submitted eventually to the Bureau of Medical Education and Licensure, as proof of having satisfactorily completed each course elected, before the applicant will be admitted to the state examination for drugless therapy.

3. During the third year the student will elect, in the institution in which he is enroled, the courses bearing on Hygiene, Preventive Medicine, Symptomatology, Diagnosis and Pathology. The same procedure as to certificates of having passed examinations and submission of the same eventually to the Bureau are to be followed.

In the meanwhile, the Bureau of Medical Education and Licensure will arrange to approve certain schools of drugless therapy in which the student may matriculate, in order to obtain the necessary instruction in the branch or branches of drugless therapy he may elect during his third year.

4. Eventually, as any schools of drugless therapy are brought up to the above requirements, they will be inspected by the Bureau of Medical Education and Licensure and approved, as sources from which drugless therapists may obtain their full course of instruction. Until such time comes, no applicant will be admitted to the Pennsylvania examinations for drugless therapy without having fulfilled the above requirements.

Any further information desired by any individual in regard to these matters will be furnished on application to the Bureau of Medical Education and Licensure, at Harrisburg.

Book Notices

RENAL DIAGNOSIS IN MEDICINE AND SURGERY. Being a Handbook of the Theory and Practice of Functional Testing of the Kidney. By Dr. Victor Blum, Tutor in Urology of the University of Vienna. English Translation by Wilfred B. Christopherson. Cloth. Price $2.00 net. Pp. 144, with sixteen illustrations. New York: William Wood & Co., 1914.

So much discrepancy exists between our urinary findings and those noted post mortem that one cannot help wondering whether he is ever justified in placing great reliance on variations in the urinary output. The fact that albumin and casts may or may not mean a pathologic lesion of the kidneys has increased our uncertainty regarding diagnosis. This situation has led to the introduction of various tests of the functional activity of the kidneys. "The aim of recent advances in modern functional renal diagnosis is to substitute a diagnosis based on physiology for empirical rules, to complete the general judgment of the renal functions by 'topical' tests of the various separate functions of the kidney." Many of the tests advocated have been shown to be absolutely useless and unreliable. This is especially the case when these tests are used to decide the question of competency or incompetency of one kidney to do the work of two in cases in which surgical intervention is contemplated. Thus we find, for instance, that cryoscopy, both of the urine and blood, for which much is and has been claimed, shows little beyond the fact that the concentration of the urine or blood is within normal limits; but "the assumption of a satisfactory renal function from a normal freezing-point of the blood is only admissible as long as we do not identify 'satisfactory function' with anatomical intactness. As in diseases of other organs, so also in affections of the kidneys—diffused and surgical renal complaints—we find a certain capacity for compensation: i. e., the excretory function of the kidneys may, in spite of extensive disease, prove adequate, since the functional deficiency of the diseased part can be supplied either by compensatory hypertrophy of other parts of the kidney or by other means, such as hypertrophy of the heart in chronic nephritis. The osmoregulatory activity of the kidneys in such a compensated case need have suffered no harm, and the freezing-point of the blood may remain normal in spite of definitely proved anatomical lesions of the kidney." It is clear, therefore, that little reliance can be placed on this test, especially regarding prognosis or advisability of surgical intervention. The same criticism applies to many of the other tests introduced. Space does not permit a review or criticism of the various methods discussed by Blum, but it suffices to say that he advocates the following procedures as especially serviceable: (1) method of experimental polyuria as advanced by Albarran; (2) administration of indigocarmin as advised by Völcker and Joseph, and (3) use of phenolsulphonephthalein as originated by Rowntree and Geraghty. The latter test is fast becoming the most popular and reliable test at our disposal for the determination of renal incompetency or disease.

This little monograph is written in a clear and concise style. The translation is, for the most part, smooth and excellent. The book is to be recommended as a reliable guide to the methods of functional renal diagnosis and the reliance to be placed on them, as well as concerning the physiologic and pathologic principles on which such diagnosis is based.

DISEASES OF THE HEART. By James Mackenzie, M.D., F.R.C.P., LL.D., Physician to the London Hospital. Third Edition. Cloth. Price, $5.50. Pp. 502, with 264 illustrations. New York: Oxford University Press, 1913.

In this edition Mackenzie has added much new material, and there has been a genuine revision and liberal rewriting. More emphasis is laid on the findings of the electrocardiograph, and there is more clearly brought out the relation of symptoms and signs to altered physiology. Therapeutic measures, as the use of digitalis in auricular fibrillation, are explained on scientific principles rather than on the grounds of empiricism. The book is up to date, well written, and from the publishers' point of view of printing, illustration and binding, all that could be desired. An appendix of nearly one hundred pages contains instructive records of a large number of illustrative cases. No one familiar with the literature of diseases of the heart will question Mackenzie's right to speak with authority, especially on questions connected with pulse-tracings and the use of the polygraph. At the same time there is uttered once in a while a note that is somewhat irritating in that it seems a little too dictatorial and fault-finding. The reader wishes to be instructed but does not care to be put in the class of "most physicians," or to be told that he will persist in not understanding a certain thing even though plainly told, etc. And in the earlier pages we cannot help resenting his intimations that teachers and writers as well as general practitioners have failed to grasp the importance of the heart-muscle and are still devoting a large part of their energies to the refinements of auscultation. We agree with most of what Mackenzie says in this connection, but we also agree with what some of his friends have told him, that much of what he says is "common knowledge" (p. 18), and we resent his imputation that writers and teachers and the best of the general practitioners are still hopelessly ignorant on these matters. To the student of heart disease the book is indispensable as embodying the riper views of a pioneer investigator. It is in no sense a text-book for the undergraduate, and is not so intended.

DIAGNOSTICS OF THE FUNDUS OCULI. (Comprising One Volume of Text with 238 illustrations and Two Portfolios Containing 79 Stereograms and 8 Diagnostic Cards; also Hand-Scope.) By Edward L. Oatman, M.D., Surgeon Manhattan Eye, Ear and Throat Hospital. Cloth. Price $25. Troy, N. Y.: The Southworth Company, 1913.

This is one of the noteworthy works on diseases of the eye printed in English during the past year. It consists of one volume, which may be regarded as the textual description of two large portfolios containing seventy-nine stereograms and eight "diagnosis cards" illustrating all the common and many of the unusual appearances of the ocular fundus. In addition to these stereoscopic views of the background of the eye, the volume of text is further illustrated by 234 cuts and four colored plates. Many of the former are reproductions of microscopic sections, and both artist and publisher, have succeeded in portraying the minute tissue-changes in a fashion not often attained in similar works. The same may be said of the stereograms. These stereographic views admirably reproduce the originals, and they certainly ought to be of great assistance to the student of ophthalmoscopic conditions. Although these carefully prepared volumes will be of service to the ophthalmologist, the neurologist and the general practitioner, yet we believe that they are of particular value in teaching. The employment of the stereoscope to bring out the details of ocular fundal lesions has in these instances proved a great success, and the views cannot fail to interest as well as instruct the student. Each stereogram has conveniently printed above it a good description of what the observer ought to see, and this arrangement will, we believe, meet a demand for undergraduate and postgraduate teaching of ophthalmoscopy not covered by any other work. Every college in which a study of the alterations in the fundus oculi forms a part of the curriculum will surely need and will be much benefited by the use of these admirable adjuncts to teaching.

Die Albuminurie. Klinische und experimentelle Beiträge zur Frage der Orthostatischlordotischen und der Nephritischen Albuminurie. Von Dr. Ludwig Jehle, Privatdozent für Kinderheilkunde in Wien. Paper. Price 4 marks. Pp. 109, with thirty-seven illustrations. Berlin: Julius Springer, 1914.

In this monograph Jehle presents the clinical and experimental evidence on which he bases his conclusion that the so-called "orthostatic" albuminuria is always a "lordotic" albuminuria. During the period of development about the age of puberty, many persons acquire an inability to assume a proper carriage of the body. This leads not only to a lordosis, but also to various circulatory changes in various parts of the body. Those in the kidney are sufficient, in the mind of Jehle, to cause the albuminuria which is evident when the patient is erect (that is, when the lordosis is present). As the lordosis disappears when the subject is lying down, so also must the albuminuria, as the circulatory disturbances are not apparent under these conditions. Jehle further shows that albuminuria may be produced with a normal patient by inducing a lordosis in the recumbent position. It would seem, therefore, that the erect (orthostatic) position is not the essential feature of this type of albuminuria but, rather, the lordosis, as Jehle assumes. This monograph is commended to those interested in the causation and differentiation of the various types of albuminuria. The views presented are worthy of consideration, and the clinical evidence produced merits more than passing mention.

A History of Laryngology and Rhinology. By Jonathan Wright, M.D., Director of the Department of Laboratories, New York Post-Graduate Medical School. Second Edition. Cloth. Price $4.00 net. Pp. 357, with illustrations. Philadelphia: Lea & Febiger, 1914.

The author presents a chronicle of the growth of the specialty indicated in the title. As specialization in practice has led to development of detail and technic, so in the description of the advance of this specialty, much detail and description are necessarily included. This specialty is not, however, too greatly isolated. In each section of the book the relations to general medicine are traced and the subjects are closely linked together. Etymology, literature, religion, economics, etc., as they have contributed to the study of laryngology and rhinology, are woven into the thread of the story. The book is interesting, readable and instructive. If there be any adverse criticism it is that many sections seem too short.

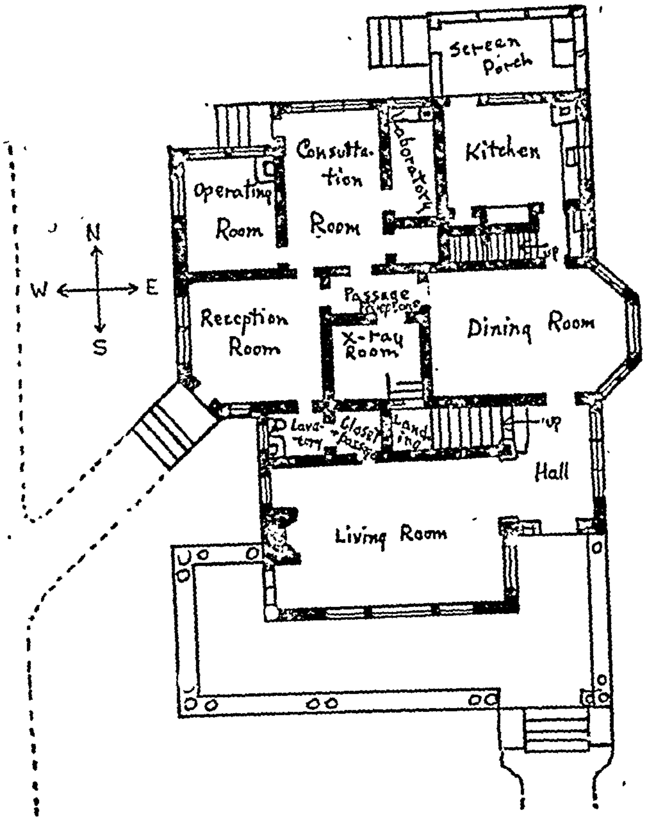
Abbau und Entzündung des Herzklappengewebes. Von Professor Dr. Paul Grawitz, Direktor des pathologische-anatomischen Instituts der Universitat Griefswald. Paper. Price, 2 marks. Pp. 32, with five illustrations. Berlin: Richard Schoetz, 1914.

This brochure relates the results of a study made by Grawitz of the growth of pieces of the heart-valves in culture-mediums. The conclusions which he reaches are confirmatory of views which he expressed several years ago, and emphasize the part played by the fixed tissues in processes of growth, repair and inflammation. The development of small, round wandering cells in hanging-drop cultures, the transformation of one type of tissue into another, and the bearing of these and other experimental observations on problems of biology and pathology are clearly stated, and the understanding of the subject made easier, by several excellent illustrations.

Miscellany

Combined Office and Residence

To the Editor:—I am sending the drawing of the main floor of my combined office and residence. It has proved very satisfactory. The idea was to keep the office and residence entirely distinct. The center of town is to the southwest, which accounts for the location of the entrances, the office entrance being first seen, though the other entrance is on the more important street. The south and east exposures are 45 feet and 68 feet, respectively, including the porch.



Plan of main floor of combined office and residence.

H. W. Oakley, M.D., Porterville, Cal.

The House-Fly and Infant Mortality

For a long time the house-fly has been accused of various criminal activities, the most serious of which in northern climates, is the transmission of diarrheal disease or summer complaint. In an effort to determine by means of social research with human beings as the subjects, the exact importance of the insect in this connection, the Department of Social Welfare of the New York Association for Improving the Condition of the Poor, through its Bureau of Public Health and Hygiene, conducted an experiment in New York City in the summer of 1913, involving the sanitation of an area in the Borough of the Bronx, the elimination of fly breeding in the neighborhood and the protection of the infants in the homes. A striking reduction in morbidity among the protected infants was obtained, and the work is described in detail by Dr. Donald B. Armstrong, director of the Department of Social Welfare (The Journal, Jan. 17, 1914, p. 200).

It was realized by the workers in this investigation that several complicating factors and uncontrollable variables threw considerable doubt over the statistical results, and consequently the study is being continued this summer. In order to ascertain the exact significance of the prevention of infection of the infant's food by flies, unsupplemented by the results of the generally improved sanitary environment, the work this year is being confined strictly to the homes where the children spend most of their time. Widely separated Irish, Italian and Jewish neighborhoods have been chosen in Manhattan Borough, to ensure a geographical and racial balance, and about 1,200 infants selected and separated into protected and unprotected groups. The infants are Department of Health cases and the most generous cooperation of the Bureau of Child Hygiene of the Department of Health is being given to the experiment, half of the twelve nurses employed being supplied by the department. All cases are visited regularly and morbidity recorded, together with any factors possibly of influence in the causation of diarrheal disease. This is true of the unprotected babies as well as of those for whom everything is being done to eliminate fly dangers from their lives.

Is it necessary to screen the house for the protection of the infant? Is it worth while to take unusual care to protect the food of the infant from flies? Are netting, fly paper, fly traps, etc., worth what they cost? On the grounds of decency we may always answer "yes." Is it, however, a health measure of prime importance? This can only be answered by research such as is now being carried on in New York City.

Sanitary Conditions in Turkey in Asia

The report of the American Hospital at Talas, Cesarea, for 1913 indicates that much good work is being done by the small American force there, assisted by the native physicians and nurses. The hospital, which is well equipped, has as its chief surgeon Dr. A. R. Hoover, and is under the supervision of the American Board of Foreign Missions. A total of 864 surgical operations was done during the year. There is need for another volunteer American physician and a trained nurse. An epidemic of typhoid fever occurred in Cesarea and the vicinity with about 300 cases and a death-rate of about 25 per cent. Speaking of sanitary conditions, the report, written by Dr. Hoover, says:

> "The sanitary condition of Cesarea being as it is, the marvel is not that frequent epidemics attack the inhabitants; rather we wonder that the whole populace is not wiped out by disease. For instance, each summer and continuing into the fall months the chief industry of Cesarea is the manufacture of 'basdirma,' a kind of dried beef, which is mixed with spices and garlic and eaten raw. Many thousands of cattle are slaughtered for this purpose every year, and this without the slightest attempt at system or order. All through the city, in the streets or in open places, the cattle are slaughtered, and, the drainage being abominable, the resulting stench and the myriads of flies may be imagined better than written. With the breaking out of the typhoid epidemic the city officials gave orders to cease the manufacture of basdirma, but within a few days, on the plea that the business of the city was being ruined, the work was resumed and went on as usual. I was called to a case of typhoid; the patient having been sick for six weeks, developed meningitis and was in a hopeless condition. The house was that of one of the well-to-do basdirma manufacturers, house and factory being in the same stone-walled enclosure. While I examined the patient, the relatives left their work and came in to sit around and discuss the case with me, while the swarms of flies had free communication between patient and the great piles of exposed dried meat waiting shipment to Constantinople. The great need seems to be some means of spreading a more general knowledge of the common facts of healthful, hygienic living among the people, that they may come to realize their lack in this respect."

Mutations in Bacteria

Experimental evidence which indicates that a given type of bacterium may be transformed into another and quite distinct type with altogether different cultural and infective characteristics has been brought forth by several authors within the past few years. R. T. Hewlett (*Nature*, April 23, 1914, p. 193) cites examples of mutations in bacteria and gives a brief summary of the recent work of Mme. Victor Henri (*Compt. rend. Sc.*, 1913, clviii, 1032).

Various alterations in the morphology and in physiologic characters of certain bacteria have been obtained by many observers. Thus, *Bacillus coli*, the plague bacillus and other organisms show considerable variation in the size of the cells on different culture-mediums; *B. prodigiosus*, which forms a brilliant red pigment when grown at ordinary temperatures, completely loses the power of pigment production after cultivation at blood heat, at which temperature (98 F.) it grows as luxuriantly as at 65 F. Twort and Penfold have educated the typhoid bacillus to ferment sugars which ordinarily it does not attack, and Revis has obtained marked varieties of *B. coli*, morphologic and physiologic, by prolonged culture in various mediums. Minchin holds that if there be no syngamy (sexual reproduction, that is, conjugation) among bacteria, as seems to be the case, the so-called species of bacteria are to be regarded as mere races or strains, capable of modification in many directions.

A marked instance of artificial production of mutations of *B. anthracis*, a particularly well-defined and stable bacterial species, is described by Henri. The method employed was to expose an aqueous suspension of sporing anthrax in a quartz tube to ultraviolet radiations for times varying from one to forty minutes, and afterward subculturing.

Whereas the majority of the organisms were killed by this treatment, the ultraviolet rays being markedly bactericidal, a few survived. Of the latter, while most presented a normal aspect, a few showed characters decidedly different from the typical anthrax bacillus. The principal of these were (*a*) coccoid forms which remained stable during a period of two months; (*b*) thin filamentous forms not taking Gram's stain, not liquefying gelatin, or curdling milk, and producing an infection different from anthrax on inoculation. This form remained absolutely fixed after daily subculture for more than eighty days; but, though stable *in vitro, in vivo*, after passage through an animal, Gram-positive coccoid forms made their appearance, and subsequently, after subculture in broth, a certain number of bacillary forms, approximating to typical anthrax, were obtained. These experiments open wide possibilities in the transformation of micro-organisms.

Epidemiology of Buffalo Outbreak of Poliomyelitis

Frost and Leake of the Public Health Service have made an epidemiologic study of the epidemic of poliomyelitis which occurred in Buffalo and vicinity in 1912. The report of their work is given in a pamphlet issued by the New York State Department of Health. After giving in detail the method and the findings of their study, they summarize their conclusions about as follows: Nothing new or distinctly unusual in the epidemiology of poliomyelitis was found. In general characteristics and course this epidemic was similar to those studied in other cities. An infection probably present for years became progressively more prevalent without discoverable specific cause. It probably started from an ill-defined focus among the Italian population in June and July, extending practically over the entire city between that time and October, attacking about 1 in 1,400 of the population, chiefly children. In those groups in which the disease developed early, it died out early, while progressing in other groups. This indicates that the infection was independent of weather conditions, and gives the impression that the infection was universal throughout the city, but attacked only those susceptible and then died out in that particular section. The fact that only a small proportion of the patients had been in contact either directly or indirectly with any previously recognized case of poliomyelitis does not disprove the contagiousness of the disease or its direct transmissibility from person to person. It does prove quite conclusively, however, that if it is commonly so transmitted, the clinically recognized cases of poliomyelitis are relatively unimportant sources of infection. Mild, unrecognized cases or human carriers must be more important. The wide scattering of cases indicates that if transmitted by biting insects they must derive the infection from sources other than human cases, and that only a small proportion of persons bitten by such insects develop the disease in recognizable form. While it is possible that domestic animals or insects may be natural sources or reservoirs of the infection, there is at present no proof of this.

Medicolegal

Non-Validity of Law Authorizing Revocation of Licenses for Advertising Relative to Diseases of Sexual Organs

(Chenoweth vs. State Board of Medical Examiners et al. (Colo.) 141 Pac. R. 132)

The Supreme Court of Colorado reverses a judgment of the district court which sustained the State Board of Medical Examiners in revoking the license of Dr. Chenoweth to practice medicine for having published in a newspaper an advertisement relative, as was alleged, to a disease and diseases of the sexual organs. The supreme court holds unconstitutional the statute of the state authorizing the board to refuse to grant, or to revoke, a license to practice medicine in the state for "causing the publication and circulation of an advertisement relative to any disease of the sexual organs." The court says that the only statute of similar import brought to its attention was one of Nebraska, in which, however, were found the qualifying words, "tending to injure the morals of the public," not in the Colorado statute.

Advertisements by physicians may be regarded by certain members of the profession as contrary to professional ethics, but with that legislatures and courts may not be concerned. The legislature has no power to confer the authority on a board of medical examiners to deny to a physician the right to advertise his business. Doubtless, however, a physician might publish an advertisement which would in itself be so grossly immoral as to constitute dishonorable conduct. To say that an advertisement which may possibly refer to resultant effects of diseases of the sexual organs, but just as possible to be produced from other causes, injuriously affects the public morals is both prudish and absurd. The court can but take notice of the trend of the times and of the fact that societies and large numbers of respectable and moral people, including physicians, are urging that sex hygiene be taught in our public schools, in the interest of the public good and public morality.

The statute is clearly so indefinite as to render it invalid for that reason alone. Besides, the penalty provided is so grossly excessive and unconscionable as to make the statute repugnant to every sense of justice, if not to render it void for such reason. Because the statute makes the act an offense only when committed by a physician, it is for that reason clearly discriminatory, in that it applies to a class of citizens only, and for such reason alone is void.

The court must not be understood as in any sense declaring for the restriction of the exercise of the police power as heretofore announced, in cases in which the purposes are plainly for the public good, for it is the tendency of courts to make such new and other application of this doctrine as the ever-changing conditions and protection of society may seem to require. But there is a necessary limit to the invasion of the inherent and constitutional rights of the citizen beyond which legislative restriction may not go, if stable government is to remain.

Exemption from Vaccination of those Conscientiously Opposed to it

(Williams et al. vs. Wheeler et al. (Cal.), 138 Pac. R. 937)

The District Court of Appeal, First District of California, says that, as the titles of the two Acts of 1889 and 1911 indicate, it is the policy of the state of California to encourage and provide for a general vaccination as the most effective method known to medical science for preventing the spread of an infectious and dangerous disease, and as such is a reasonable and proper health regulation, but it would [rather] seem to be the very opposite of a health regulation for a law, whose title declares its purpose to be "to encourage and provide for a general vaccination," to have embraced within it a proviso exempting from such vaccination those whose mental attitude is that of opposition to the avowed object of the law. The object and effect of such an exemption in such a case, as in this involving the question of exemption from vaccination, would be to defeat the very intent of the law itself, by an exception, not founded on considerations of health, destroying that generality within the sphere of its operation which would be essential to its effectiveness as a health regulation.

In the opinion of the court, therefore, the provision of the Act of 1911, which seeks to exempt those persons who are conscientiously opposed to the practice of vaccination from the operation of the law, otherwise general in its terms, requiring vaccination of persons seeking admission to educational institutions, is not in the nature of a health regulation. That being so, it is not such a proviso as would come within the general police powers with which the legislature is invested. Hence it cannot be availed of by those seeking enrollment in the University of California to nullify and avoid the operation and effect of the existing rule of the authorities of the university on the subject of vaccination.

Construction of Statute with Reference to Privileged Communications

(Booren vs. McWilliams (N. D.), 145 N. W. R. 410)

The Supreme Court of North Dakota says that the statute of that state prohibits a physician from being examined as a witness, without the consent of his patient, as to any information acquired in attending the patient, which was necessary to enable him to prescribe or act for the patient. These provisions are most wholesome and salutary when applied to cases coming within the reasons for the enactment of the statute, but, if construed too strongly in favor of the patient, the beneficent effects intended to result from this enactment will be far more than overcome by the injustice which must in many cases result. To hold that any conversation, had by a patient with his physician while attending him as such, is privileged would be to render the phrase "which was necessary to enable him to prescribe or act for the patient" totally ineffective. In this case, an action for breach of promise of marriage aggravated by seduction, an offer was made to prove that the physician who attended the plaintiff during confinement, on a subsequent visit to her, was told by her that she did not have intercourse with the defendant until about six and one-half months prior to the birth of the child, that she never had had any talk with the defendant about marriage, and that the reason she let him have intercourse with her was that she thought, if she became pregnant, he would marry her. Under the circumstances surrounding the visit, it was apparent that such information, if given the physician, was not necessary to enable him to prescribe or act for the plaintiff, and therefore it was not privileged under the statute.

Malpractice Liability of Surgeon Employed by Company

(Hoffman vs. Watkins (Wash.), 138 Pac. R., 664)

The Supreme Court of Washington reverses a judgment obtained by the plaintiff for alleged malpractice in the treatment of an injury to one of his shoulders. The court says that the allegations were that the defendant carelessly and negligently failed to examine the shoulder properly and to ascertain its true condition, but improperly diagnosed the injury as a sprain, and treated it accordingly, when as a matter of fact the shoulder was dislocated. It was not necessary to establish a contractual relation between the defendant and the plaintiff, for it is clear that, whether the relation was that of physician and patient alone or whether the services of the defendant were engaged because of his contract with the lumber company, his duty to the plaintiff would have been the same. The authorities all agree that, so long as the relation of physician and patient exists, however that relation was formed or whether the service was gratuitous or for an expected fee, the physician owes his patient the same measure of duty and the same degree of care and skill and is to the same extent answerable for the failure of its exercise to the injury of the patient.

It is the duty of the court to make a plain and concise statement to the jury of what the triable issues are, to aid them in determining the only controversy they are called on to determine. The defendant was entitled to have the jury instructed to the effect that negligence could not be inferred nor presumed from the failure to effect a cure, and that the condition of the plaintiff's shoulder subsequent to the defendant's treatment did not of itself establish an inference that the defendant had been negligent in his treatment.

Society Proceedings

COMING MEETINGS

Amer. Assn. of Obstetricians and Gynecologists, Buffalo, Sept. 15-17.
American Electro-Therapeutic Association, Battle Creek, Sept. 15-17.
American Roentgen Ray Society, Cleveland, Sept. 9-12.
Colorado State Medical Society, Boulder, Sept. 8-10.
Med. Soc. of the Mo. Valley, Des Moines and Colfax, Ia., Sept. 17-19.
Michigan State Medical Society, Lansing, Sept. 11-12.
Oregon State Medical Association, Portland, Sept. 10-11.

Current Medical Literature

AMERICAN

Titles marked with an asterisk (*) are abstracted below.

American Journal of Diseases of Children, Chicago

July, VIII, No. 1, pp. 1-112

1 *Respiratory Exchange of Infants. F. G. Benedict and F. B. Talbot, Boston.
2 *Case of Acute Chylous Ascites (Non-Fatty, Pseudochylous, Lactescent or Milky Type) in Boy Eight Years Old. F. Huber and H. M. Silver, New York.
3 Review of Literature on Feeding and Gastro-Intestinal Diseases of Infants, for Year 1913-1914. G. Meigs, Chicago.
4 Review of Syphilis with Especial Relation to Hereditary Syphilis. H. P. Towle, Boston.

1. **Respiratory Exchange in Infants.**—If, Benedict and Talbot state, it is maintained that the total metabolism is proportional to the body-surface, it should be stated that this is not due to the fact that there is a loss of heat from the body-surface and that Newton's law of cooling determines the intensity of the metabolism, but that with normal persons the body-surface, blood-volume, the area of the trachea and aorta, and probably the active mass of protoplasmic tissue, are all in simple mathematical relation to the body-weight. Thus the apparent relationship which has previously been observed between the heat-output and the body-surface with normal or nearly normal persons has an explanation in that with such persons a simple relation exists between the body-surface, blood-volume, body-weight, and the mass of active protoplasmic tissue.

In their series of observations Benedict and Talbot attempted to eliminate completely all muscular activity, to make the experiments under approximately the same conditions as to nutriment, to select such a diet as was least stimulating to the catabolism and to have the subject for the most part in deep sleep, thus eliminating psychic disturbances. They believe that their evidence points strongly and conclusively to the fact that the active mass of protoplasmic tissue determines the fundamental metabolism. The absence as yet of a direct mathematical measure of the proportion of active protoplasmic tissue does not, they believe, in any wise affect the convincing nature of our evidence.

2. **Acute Chylous Ascites.**—Aside from the presence of the chylous fluid, the case cited by Huber and Silver was interesting in many other respects. For instance: (1) The small amount of urine passed. Though only 8 or 9 ounces were excreted in twenty-four hours, there was no evidence of any systemic disturbances, as headache, nausea, vomiting, etc. (2) The general well being of the patient. Excepting the discomfort due to the distended abdomen, the boy did not make any complaint. The appetite was good and bowels regular. Pulse and temperature normal. (3) The rather unusual type of ascites with edema of the back, abdomen, thighs and genitals (ankles, legs and chest, not involved) and no edema of the face at any time throughout the course of the disease. (4) The rapid return of the fluid after tapping, presumably explained by the fact that a collateral circulation had not been established, as condition was rather acute. (5) The marked diminution in the amount of edema of abdomen, genitals, etc., after the tapping, and its rapid return when the puncture had healed. (6) The rapid subsidence of the external localized edema after operation. (7) The decided increase in the urinary excretion soon after operation, evidently the direct results of the removal of the intra-abdominal pressure and the establishment of peritoneal drainage. (8) The brilliant success of the surgical measure adopted.

Internal drainage was carried out as follows: Six strands of No. 7 white silk 4 inches long were caught in the grasp of a narrow-bladed dressing forceps, carried *into the* abdomen and *thrust through the* peritoneum to the outer side of the femoral vessels into subcutaneous tissues of the thigh, only half an inch of the silk *remaining within the* peritoneal cavity. This was repeated on the opposite side. At the upper angle of the wound six more strands of silk of the same length as used below were *thrust into the* subcutaneous tissues of the abdominal wall above the umbilicus, the lower half inch *remaining within the abdominal cavity.* Great care was taken to allow only a very little of the silk to project within the abdominal cavity, as it has been found by actual experiment that *long silk strands may* cause intestinal obstruction *by forming attachments to the omentum or any* organ within reach. The patient reacted well and his convalescence was rapid and uneventful. The dressings were removed at the end of a week and the wound was found completely healed, with no edema of its edges. There was some edema in the upper part of the right thigh, very little in the left thigh, and none over the upper portion of the abdomen. Five months after operation the boy was found to be in excellent health; the fluid had not returned. Abdomen lax, no masses could be felt on a most careful examination, nor could any thickening be made out in the neighborhood of the silk drains.

American Journal of Medical Sciences, Philadelphia

July, CXLVIII, No. 1, pp. 1-156

5 Ninety Cases of Acute Epidemic Poliomyelitis. F. R. Fraser, New York.
6 Gall-Stones Viewed from Surgical Standpoint. N. Jacobson, New York.
7 *Lange's Colloidal Gold Reaction in Cerebrospinal *Fluid.* R. I. Lee and W. A. Hinton, Boston.
8 *Effect of Extracts of Sheeps' Thyroid and of Pathologic Human Thyroid on Fatigue Curve of Voluntary Muscle. C. K. Drinker and K. R. Drinker, Philadelphia.
9 *Treatment of Imperfectly Descended Testicles. E. M. Corner, London.
10 Wassermann Reaction. B. A. Thomas and R. H. Ivy, Philadelphia.
11 Involution of Nasopharynx, and Its Clinical Importance. W. S. Bryant, New York.
12 Metabolism Studies in Case of Myasthenia Gravis. T. Diller and J. Rosenbloom, Pittsburgh.
13 Serum Diagnosis of Pregnancy and Its Underlying Principles. J. S. McLester, Birmingham, Ala.
14 Complement Fixation Test in Typhoid; Its Comparison with Agglutination Test and Blood Culture Method. A. L. Garbat, New York.
15 Relation of Lesions of Small Intestine to Disorders of Stomach and Cap as Observed Roentgenologically. L. G. Cole, Boston.

7. **Gold Reaction in Cerebrospinal Fluid.**—The authors' experience confirms the findings of other observers that the gold test is delicate, and that the margin of error is exceedingly small. A gold reaction typical for syphilis is nearly constant in cases of syphilis of the central nervous system.

8. **Effect of Thyroid on Voluntary Muscle.**—Desiccated sheeps' thyroid containing 0.2 per cent. of iodin was macerated by Drinker and Drinker in Ringer's solution isotonic for the frogs, and the filtrate contained the substance used in the experiments. By such a method only a small amount of the original material is represented in the filtrate, as the dried gland is but slightly soluble. The authors term filtrations which resulted from the use of 5 gm. of dried thyroid per 100 c.c. of Ringer's solution, 5 per cent. solutions; those

which before filtration contained 1 gm., 1 per cent. solutions, and so on throughout the entire series. They found that Ringer's solution extracts of dried sheep's thyroid caused depression in 3 per cent. solutions. The depression gave way to slight stimulation between 1 and 2 per cent. of strength. At 1 per cent. there was usually no effect distinguishable from pure Ringer's solution. Similar material from cases of Graves' disease gave no equal amount of depression. Clinical observation on myasthenia gravis and exophthalmic goiter is suggestive in this relation. In addition there was irregularity in the strength of contractions, but the series is much too small to call this a specific attribute. Extract from cases of colloid goiter gave in most cases no depression; and in all less depression than was obtained with either the sheeps' thyroid or with extracts of parenchymatous goiters. There is no irregularity in the strength of contractions such as was noticed with the latter type.

9. **Imperfectly Descended Testicles.**—Corner is convinced that the operation of orchidopexy more frequently fails from atrophy of the gland than by not retaining that gland in a good position. The treatment suggested by Corner for the condition of imperfectly descended testicles is summed up from the point of view of the age of the patient, as the condition is a congenital one. At birth and up to the age of about 5 years of age he advises to watch the case to decide if the testicle is merely late in its descent or not. If a hernia is seen to be present, operate and conclude by doing an orchidoplasty. From 7 to 20 years of age, operate if a hernia is present or not; do either an orchidoplasty, an orchidectomy or an orchidocoelioplasty. Above 20 years of age, do an orchidectomy.

Boston Medical and Surgical Journal

July 16, CLXXI, No. 3, pp. 89-136

16 *Salpingitis—Results of Treatment by Abdominal Approach. C. L. Scudder, Boston.
17 Case of Supposed Progeria (Premature Senility) in Girl of Eight Years. C. W. Rand, Boston.
18 Mushroom Poisoning. E. S. Bagnall, Hartford, Conn.

16. **Salpingitis — Results of Treatment by Abdominal Approach.**—In the series of 74 cases analyzed by Scudder there were 69 operations. There were 3 deaths following the operations, or an operative mortality of 4 per cent. One of these deaths was from shock following a right salpingectomy and an appendectomy, with drainage. There was 1 death due to a septic abortion, the operation being a dilatation and curettage. There was 1 death, evidently due to shock, following a right salpingectomy with drainage of pelvic cellulitis and an appendectomy. A report was received from 40 to 71 living patients out of the 74 total. Of the 5 treated without operation, only 1 reported and she was unrelieved. Thirty-six of the 39 operative results were reported relieved, or 92.3 per cent. Three of the 39 operated results were reported unrelieved, or 7.6 per cent. There were no extra-uterine pregnancies reported in the remote result of any case. Out of 9 cases having had a right salpingectomy and 3 cases having had a left salpingectomy, there were reported four subsequent pregnancies. In this series there was 1 salpingostomy. No pregnancy has resulted in this case.

Of the 39 operative results 2 cases reported a further operation, both of which followed a double salpingectomy. There were five patients who developed hernia in the operation scar, four following a double salpingectomy with a partial oophorectomy, and 1 following a left salpingo-oophorectomy with drainage. Of the 39 operated patients from whom a report was received 2 had double salpingo-oophorectomies. Both of these patients were relieved and there were no sequelae excepting a hernia in the scar in one case. Of the total 42 operations of double salpingectomy a report was received from 24 patients, 22 of which were relieved, 91.6 per cent. There were no operative deaths. Two patients were unrelieved by the operation. A double oophorectomy was done in 3 cases and a single oophorectomy in 18 cases, 5 patients had a curettage, and 12 patients had an appendectomy.

Of the 16 total operations of right salpingectomy a report was received from 9 patients, 8 of whom were relieved, 88.8 per cent. There were two operative deaths. One patient was unrelieved by the operation. A right oophorectomy was done in 8 cases, and an appendectomy in 4 cases. Of the 8 operations of left salphinectomy a report was received from 3 patients, all of whom were relieved. There was 1 operative death. A left oophorectomy was done in 4 cases and a right oophorectomy in 1 case; a ventral suspension was done in 1 case, and a curettage in 1 case. Of the 2 operations of division of adhesions a report was received from both, both being relieved, 100 per cent. An appendectomy was done in connection with one case. An exploratory laparotomy was done in one case in which nothing was found to account for the symptoms. The patient recovered and has no acute symptoms since. Of the 5 patients treated by hot douches, the symptoms in all rapidly subsided, and they were discharged relieved from the hospital. One of the 5 patients made a later report complaining of chronic symptoms. Four patients were not heard from.

Bulletin of American Academy of Medicine, Easton, Pa.

June, XV, No. 3, pp. 119-180

19 Physical Bases of Crime. Z. R. Brockway.
20 Resume and Recommendations of Committee to Investigate Teaching of Hygiene in Public Schools. H. C. Putnam, Providence, R. I.
21 Larger Meaning of Medical Missions. J. A. Melrose, Minneapolis.
22 Modern Medicine in China. E. D. Vanderburgh, Siangtan, Hunan, China.
23 Mount Lebanon Sanatoria at Juneh and Chebanin, Syria. M. P. Eddy, Syria.
24 Caroline A. Ladd Hospital. J. H. Wells, Pyengyang, Korea.
25 American Presbyterian Mission, Canton, China. H. W. Boyd, China.
26 Work in Wei-Hsien. C. K. Roys, Wei-Hsien, Shantung, China.
27 Habit Producing Drugs and Crime. R. W. Wilcox, New York.
28 Head Injury and Syphilis as Cause of Crime. B. Glueck, Washington, D. C.

California State Journal of Medicine, San Francisco

July, XII, No. 7, pp. 263-302

29 Fundamentals in Teaching Sex Hygiene. J. C. Hollister, Pasadena.
30 Treatment of General Paralysis of Insane. C. W. Mark, Agnews.
31 Swift-Ellis Treatment of Cerebrospinal Syphilis. P. K. Brown and W. T. Cummins, San Francisco.
32 Prostatic Carcinoma in Youth of Seventeen. S. J. Gardner and W. T. Cummins, San Francisco.
33 *Relation of Localized Tenderness to Site of Causal Lesion in Perforative Peritonitis. R. T. Stratton, Oakland.
34 *Butyric Acid Test (Noguchi) as an Aid in Diagnosis. F. F. Gundrum, Sacramento.
35 Tabulation and Differential Diagnosis of Liver Cases Occurring in Stanford Wards of City and County Hospitals During Past Few Months. R. W. Harbaugh, San Francisco.
36 Uncomfortable Babies. L. Porter, San Francisco.
37 Death Following Ant Bite. T. C. Edwards, Salinas.
38 Intracranial Pressure. H. C. Naffziger, San Francisco.
39 Echinococcus in California. J. R. Snyder, Sacramento.
40 Registration Law and Requirements for Accrediting Schools for Nurses. A. C. Jammé.

33. **Relation of Localized Tenderness to Perforative Peritonitis.**—As the result of personal observation Stratton is disposed toward the following conclusions bearing on the relation of localized tenderness to the site of the causal lesion. 1. The site of the perforated ulcer, as indicated by moderate abdominal palpation within several hours after the onset, is not uniformly intensely sensitive. 2. Neither is it always the most sensitive area. 3. In addition to the well recognized local symptoms referable to the region of the perforated ulcer and the appendix, other parts of the abdominal viscera may, exceptionally, be the seat of confusing sensitiveness.

The following is offered as a possible solution: The portion of peritoneum at the site of perforation in certain instances being subjected to continuous, prolonged irritation from an unusually concentrated and irritating extruded gastric contents, to which the tissues of some individuals may react differently than those of others, may after a time, lose something of its sensitiveness and fail to respond to increased stimulation by palpation. This condition would only be analogous to the well-recognized depression of nerve function, even paralysis, resulting from overstimulation in other parts of the body of motor and special sense nerves. Or as a result of local toxic and inflammatory influences, actual changes may take place in the delicate peritoneal nerve terminals that prevent the conduction of pain impulses. Coincidentally, other areas coming within the zone or spreading irritation, either for some reason naturally more sensitive or having been subjected to a less overpowering degree of irritation, by reason of their distance from the ulcer, may at this later period and at least temporarily, be relatively more keenly alive to pressure than is the original focus from which the irritation has come. That the greatest abdominal wall protective rigidity should then be over these now more sensitive parts does not seem to be strange or unreasonable; or that, as these new peritoneal areas are involved, symptoms referable to the newly affected part may stand out, at least for a time, with conspicuous boldness and attract and unduly hold the surgeon's attention.

At times the approximate site of perforation is susceptible of fairly close determination. But again, with an incomplete antecedent and recent history, a knowledge of which the sufferings of the patient or the ignorance or nervousness of his associates prevent the surgeon from gaining; with an atypical symptomatology; with other symptoms resulting from almost necessary complications of the primary disease pressing to the front and obscuring the original state; with the usual signs of morbidity dissipated or altered by injudicious narcotic medication, the clinical picture may be so changed, that the diagnostic skill of the well-informed surgeon may be overtaxed.

34. **Butyric Acid Test as Aid in Diagnosis.**—In a series of 43 cases examined by Gundrum the butyric-acid test was positive in all instances in which marked inflammation or degeneration was going on in the cerebrospinal system. It was absent in diseases in which, although there seemed to be spinal involvement, no actual organic nervous lesion was present. In all doubtful cases simulating inflammatory diseases of the brain or spinal cord, spinal puncture is indicated. If the fluid is turbid, the butyric-acid test is superfluous. If the fluid is clear, the butyric-acid test enabled him to tell whether or not inflammatory or degenerative changes are taking place. In other diseases in which symptoms of meningeal irritation arise the obtaining of a clear spinal fluid which fails to show the butyric-acid test of Noguchi is of considerable moment, particularly in the matter of prognosis.

Illinois Medical Journal, Chicago

July, XXVI, No. 1, pp. 1-76

41 Needs and Purposes of State Medical Society. C. J. Whalen, Chicago.
42 Simple Goiter Compensatory Hypertrophy; Its Symptoms and Relation to other Clinical Types. C. G. Buford, Chicago.
43 *Rheumatism in Children.* J. Brennemann, Chicago.
44 Considerations of Blood-Pressure. G. S. Bower, Galesburg.
45 Autogenous Vaccines in Treatment of Chronic Pus Infections. M. L. Mendel, Chicago.
46 Trichinosis and Typhoid. Report of Case. P. Chester, Chicago.
47 Value of Blood-Pressure in Interpreting Some Clinical Manifestations. H. A. Cables, E. St. Louis.
48 Hydrotherapy in Treatment of Insane. A. H. Dollear, Hospital.

Journal of Experimental Medicine, Lancaster, Pa.

July, XX, No. 1, pp. 1-91

49 Present Condition of Strain of Connective Tissue Twenty-Eight Months Old. A. Carrel, Boston.
50 *Patching and Section of Pulmonary Orifice of Heart. T. Tuffier and A. Carrel, Boston.
51 *Experimental Operations on Sigmoid Valves of Pulmonary Artery. A. Carrel, Boston.
52 *Relation of Spleen to Blood Destruction and Regeneration and to Hemolytic Jaundice. Changes in Bone Marrow after Splenectomy. R. M. Pearce and O. H. P. Pepper, Philadelphia.
53 *Mechanism of Anaphylatoxin Formation. J. W. Jobling and W. Petersen, New York.
54 *Complement Fixation Tests in Chronic Infective Deforming Arthritis and Arthritis Deformans. T. W. Hastings, New York.
55 *Polyvalent Antigen for Complement Fixation Test for Streptococcus Viridans Infection. T. W. Hastings, New York.
56 Technic and Accuracy of Method of Douglas and Haldane for Calculating Dead Space in Breathing. E. P. Carter, Saranac Lake, N. Y.

50. **Patching and Section of Pulmonary Orifice Heart.**—The purpose of the experiments conducted by Tuffier and Carrel was to develop a technic by means of which the pulmonary orifice could be enlarged. The operation consisted in suturing to the anterior side of the orifice a venous patch which permitted an increase in the circumference of the orifice after the arterial wall had been incised. Although these operations were in the developmental stage, nevertheless only two animals died of the eight that were experimented on. One of these died on the operating table from fibrillary contractions, probably due to the fact that a branch of the coronary artery had been taken up by one of the stitches. A second dog died of pericarditis a few days after the operation. In the six other instances the animals sustained no shock after the operation, remained in good health, and were still normal more than six months after the operation. These experiments show that it is possible to perform an operation, the object of which is to increase the circumference of the pulmonary orifice without involving much danger to the life of the animal. The authors suggest that operations of this type may come to be employed in the treatment of stenosis of the pulmonary artery in man.

51. **Operations on Sigmoid Valves of Pulmonary Artery.**—Incision, suture and cauterization of the sigmoid valves of the pulmonary artery have been performed successfully by Carrel in dogs. In the first series of ten animals, there were only three accidents, probably from largely preventable causes, leading to the death of the animals.

52. ***Blood-Destruction and Regeneration.***—The bone-marrow of splenectomized dogs has been examined by Pearce and Pepper with a view to determining the compensatory or other changes following the removal of the spleen. The material consists of marrows representing periods varying from three weeks to twenty months after splenectomy. During the early periods, one to three months, the change in the marrow is slight and either focal or peripheral; after six to twenty months the replacement of fat by marrow cells is complete or nearly so. Exceptions were, however, seen in four animals representing the eighth, ninth, tenth and twenty-second months, respectively. The evidence at hand does not support the theory that this hyperplasia is compensatory either to the anemia caused by splenectomy or to an increased hemolysis in the lymph-nodes. The authors suggest that it may be a concomitant of the activity of the bone-marrow in taking over, in the absence of the spleen, the function of storing and elaborating the iron of old blood-pigment for future utilization by new red cells, but their studies do not fully support this view.

53. **Mechanism of Anaphylatoxin Formation.**—The unsaturated lipoids (serum antitrypsin) Jobling and Petersen state can be absorbed from guinea-pig serum, rabbit-serum and horse-serum by kaolin, starch, agar and bacteria. Diphtheria toxin and cobra venom also reduce serum antitrypsin, possibly because of their affinity for lipoids. Anaphylatoxins represent sera rendered toxic by partial removal of serum antitrypsin. The matrix of the protein split products lies in the serum proteins so exposed. The amount of removal of serum antitrypsin depends on definite quantitative relations; very large amounts and very small amounts of absorbing substances are least effective (kaolin, starch and bacteria). Bacteria previously treated with serum or with oils do not absorb antitrypsin. Bacteria treated with serum become more resistant to the action of trypsin.

54. **Complement-Fixation Tests in Arthritis.**—From a comparison of the results with arthritis deformans and with control cases Hastings believes he is justified in concluding that *Streptococcus viridans* is an infectious agent and excites the production of a complement-fixing substance (fixateur) in the organism in cases of arthritis deformans, and, therefore, *Streptococcus viridans* is the probable causative agent of the disease in many cases of arthritis deformans. He claims that probably 40 per cent. and more of cases of arthritis deformans should be considered as chronic infective deforming arthritis. Rarely the clinical manifestations of arthritis deformans may be due to gonococcus infection. The

serum from one case may react positively to two different organisms, most frequently to *Streptococcus viridans* and to gonococcus, when the reaction to the former should be considered the indicator of the causative agent, since with the latter infection is often latent in the genito-urinary tract. Incidence of gonococcus infection is high and the clinical manifestations of arthritis deformans are rarely produced by gonococcus infection.

55. **Polyvalent Antigen for Complement-Fixation Test.**—Hastings states that the technic of complement-fixation tests for infection with *Streptococcus viridans* is so laborious and difficult that the method will not be available for general clinical work.

Journal of Outdoor Life, New York

June, XI, No. 6, pp. 160-191

57 Tuberculosis and Road to Eldorado. E. L. Trudeau, Saranac Lake.
58 Week from Diary of Lazy Man. C. R. Flannigan, Colorado Springs, Colo.
59 Exhibit that Really Exhibits. L. W. Hine, Saranac Lake.
60 Comparative Cost of Maintenance of Sanatoria and Hospitals for Tuberculous in United States. M. Collins, Denver.

July, No. 7, pp. 192-223

61 Hemorrhage in Tuberculosis. A. A. Pleyte, Wales, Wis.
62 Day and Night Camp "Rutherford." R. M. Mills, Brooklyn.
63 Putting Courage into Crusade. E. M. McCormack, Grand Rapids, Mich.
64 Incidence of Tuberculosis Among Physicians and Nurses. L. I. Dublin, New York.
65 Without Camp. H. Shigley, Colorado Springs, Colo.

Kentucky Medical Journal, Bowling Green

July, XII, No. 13, pp. 339-434

66 Health Problems of Kentucky. D. P. Curry, St. Charles.
67 Tuberculosis. W. L. Heizer, Bowling Green.
68 Extra-Uterine Pregnancy. C. A. Fish, Frankfort.
69 Vaccine Treatment of Pertussis. J. A. Kirk, Louisville.
70 Uses of Roentgen Ray as Diagnostic Agent. J. B. Mason, London.
71 Appendicitis. J. H. Parker, Corbin.
72 Country Practitioner and Cut Fees. W. Pennington, Bertha.
73 Tumors of Breast. T. C. Nichols, Morgan.
74 Trachoma. R. I. Kerr, Belmont.
75 Case of Mercury Bichlorid Poisoning with Recovery. H. G. Herring, Lexington.
76 Pleurisy. H. T. Morris, Greenup.
77 Diagnosis of Pregnancy. A. E. Threlkeld, Wheatley.
78 Hookworm Arthritis. B. F. Van Meter, Lexington.

Lancet-Clinic, Cincinnati

July 4, CXII, No. 1, pp. 1-24

79 Operations for Cure of Chronic Ear Suppuration. N. H. Pierce, Chicago.
80 Prolapse of Uterus and Its Treatment. A. D. Willmoth, Louisville, Ky.
81 Sex Problems. (To be continued.) I. O. Allen, Metamora, Ind.

July 11, No. 2, pp. 25-60

82 Treatment of Syphilis of Nervous System by Means of Salvarsanized Serum in Vivo: Ninety-One Injections in Twenty Cases. R. B. H. Gradwohl, St. Louis.
83 "Business" of Keeping Insane. Is There Better Way? B. Holmes, Chicago.

Laryngoscope, St. Louis

June, XXIV, No. 6, pp. 565-644

84 Corrective Rhinoplasty. L. Cohen, Baltimore.
85 Histopathology of Faucial Tonsil. T. E. Carmody, Denver.
86 Treatment of Accidental Wounds of Dura During Operations on Mastoid Process. E. B. Dench, New York.
87 Anesthesia in Aural Surgery. W. G. Doran, New York.
88 Asepsis in Office Practice. C. G. Crane, Brooklyn.

Medical Record, New York

July 18, LXXXVI, No. 3, pp. 95-140

89 Diagnosis and Treatment of Gastric and Duodenal Ulcers. M. Einhorn, New York.
90 Roentgen Rays and Radio-active Chemicals in Treatment of Gynecologic Conditions. E. H. Grubbé, Chicago.
91 *Treatment of Toxemia of Pregnancy of Duodenal Enema. E. McDonald, New York.
92 Value of Eugenics in Hunting's Chorea. C. R. McKinniss, Norristown, Pa.
93 Carbon Dioxid Bath and Its Uses. A. W. Ferris, Saratoga Springs.
94 General Diagnosis and Treatment of Diseases of Pancreas. I. W. Held, New York.

91. **Treatment of Toxemia of Pregnancy by Duodenal Enema.**—McDonald has treated twelve cases of toxic vomiting of pregnancy by means of a duodenal tube, which is a modification of the Jutte tube. The procedure is as follows: A small rubber tube about the caliber of 12 F, is thrust into the stomach after the pharynx has been anesthetized by a local anesthetic spray. Most patients are able to swallow the tube themselves after the first treatment, but at the first attempt, in order to maintain the patient's confidence, it is better to cocainize the throat and insert the tube with the patient sitting up in a chair. The tongue is depressed with the forefinger while the tube is thrust down with the other hand, the patient being advised to breathe deeply and slowly, in order to prevent any nausea. When the tube is down about 22 inches, 8 ounces of a solution of sodium chlorid in amount a trifle stronger than the physiologic solution, is injected by means of a syringe through the tube into the stomach. This usually effectually neutralizes the tendency to vomit. The tube is then thrust further down to about the length of 28 inches. The patient is then placed on her right side in a semiprone position. The waistbands are loosened. After a few minutes, suction is made by means of a vacuum bottle and syringe to withdraw some of the contents through the tube. When bile or intestinal juice is obtained, it is considered that the tip of the tube has passed the duodenum. The stomach should be empty for several hours before the treatment is given. It is usually possible to pass the pylorus within five to seven minutes.

An injection is then made by means of a gravity can of a liter of a solution containing from 4 to 6 gm., by measure, of granular sodium sulphite. This solution has the effect of precipitating itself through the intestines; within thirty minutes from the time the last of the sulphate solution is introduced into the tube the first of it appears at the anus. No patient has required more than a single treatment, as after the first general hygienic measures can be instituted, such as regulation of the bowels, drinking a large quantity of water, and a simple diet. Among the twelve cases no patient, save one, has had any vomiting after the treatment. In the beginning several patients had a number of treatments because McDonald did not believe it possible that one treatment would cure them.

Military Surgeon, Chicago

July, XXXV, No. 1, pp. 1-100

95 Identification of Two Unknown Dead Soldiers by Finger Prints. A. W. Williams, U. S. Army.
96 Surgeon's Division in Naval Militia. How Can It Best Fit Itself and Men It Serves for Service of Nation in Time of War, M. W. Houghton, R. I. N. B.
97 Venereal Prophylaxis, from December, 1913, to April, 1914, at Fort Washington, Md., for Purpose of Showing Its Efficacy. M. Ashford, U. S. Army.
98 Medical Survey of Indian Village, Haines, Alaska. H. M. Craig and J. S. Lambie, U. S. Army.
99 Sanitary Officer in Field. F. Schavoir, Conn. N. G.

Mississippi Medical Monthly, Vicksburg

July, XIX, No. 3, pp. 45-64

100 Clinical Significance of Ammoniacal Urine in Infants and Young Children. R. A. Strong, Pass Christian.

New York Medical Journal

July 18, C, No. 3, pp. 109-156

101 Biochemical Function of Endometrium in Etiology of Metrorrhagia and Menorrhagia. J. R. Goffe, New York.
102 Mensuration and Projection of Posterior Urethra and Vesical Floor by Means of Posterior Urethral Calipers and Roentgenography. V. C. Pedersen and B. C. Darling, New York.
103 Prevention of Cancer. A. C. Wood, Philadelphia.
104 Instrument for Direct Application of Radium to Neoplasms of Bladder. W. Ayres, New York.
105 Valvular Disease in Infancy and Childhood. R. Abrahams, New York.
106 Three Cases of Acute, Double Optic Nerve Atrophy. H. F. Hansell, Philadelphia.
107 Bone Complications in Renal Tuberculosis. H. Neuhof, New York.
108 Alkaloids. A. C. Reed, Changsha, China.
109 Case of Purpura Hemorrhagica. Morbus maculosus, Werlhofi. G. Parker, Burin North, Newfoundland.

Northwest Medicine, Seattle, Wash.

July, VI, No. 7, pp. 189-220

110 *Prevalence of Goiter in Northwest. D. C. Hall, Seattle.
111 Problems in Gastric Diagnosis. F. Epplen, Spokane.
112 Chronic Pyelitis. W. J. Pennock, Spokane.
113 *Twenty Cases of Renal Tuberculosis. A. H. Peacock, Seattle.
114 Kefir, Fermented Medicinal Milk. A. Tilzer, Portland, Ore.
115 Internal Secretion of Sexual Glands. C. E. Eaton, Seattle.

110. **Prevalence of Goiter.**—The series of students in the University of Washington examined by Hall consisted of 2,086 men with the average age of 20 years and 5 months, and 1,253 women with the average age of 19 years and 3 months. Of the 2,086 men, 374 were affected as follows: 272 classed as perceptible, or 13.03 per cent.; 92 classed as medium, or 4.43 per cent.; 10 classed as large, or 0.48 per cent. Of the 1,253 women, 388 were affected as follows: 294 classed as perceptible, or 23.45 per cent.; 85 classed as medium, or 6.79 per cent.; 9 classed as large, or 0.7 per cent. Of the nineteen classed as large, four had a marked exophthalmos, one man and three women. They were strikingly of the plethoric type, large, full-blooded and verging on the obese. But one, a girl, showed signs of a toxemia and that only on exertion or especially during excitement, at which time tachycardia sweating and tremor became apparent. The exophthalmos was such in two other cases, one man and one woman, that complete closure of the eyelids was impossible. The enlarged gland was symmetrical as a rule, but when asymmetrical the enlargement was always on the right side. Careful observation was made of the examinations of 582 men, of whom 96 had either a medium or perceptible enlargement. Of this number nine, or 9.4 per cent., were on the right side. It was attempted to determine the incidence of heredity, but this was unreliable. In a series of 343 women of whom 83 were affected, ten, or 2.9 per cent., gave a history of the malady in the family. The direct hereditary quality here is not such that much credence can be placed in it.

113. **Renal Tuberculosis.**—In summing up his study of twenty cases of renal tuberculosis, Peacock is impressed with several very clear conditions. First, the uniform consistency with which the tubercle bacilli were demonstrated in the urine, being found in all but one case. Second, hematuria that was noticed by the patient in 60 per cent. of the cases. It usually occurred early and was not associated with pain. Third, that sex makes little difference, nine cases being females and eleven males. Fourth, age at the time of consultation was 26 years, the youngest being 14 and the oldest 43. Fifth, 60 per cent. were demonstrated to be bilateral, that is, the tubercle bacillus was so found at the first catheterization. With such a finding there should be considerable hesitation before he resorts to nephrectomy. Again, we should remember the origin of renal tuberculous infections, and that if one organ has become involved it is reasonable to suppose that if the other one is not also infected, the possibility of breaking down later is great, as in cases 5 and 7. Sixth, in 65 per cent. of these cases were found other tuberculous lesions and it is safe to assume that the remaining ones there must have been tuberculous processes that escaped the physical examination.

Philippine Journal of Science, Manila

February, IX, No. 1, pp. 1-133

116 *Cockroaches and Ants as Carriers of Vibrios of Asiatic Cholera. M. A. Barber.
117 Reappearance of Plague in Philippines after an Absence of Six Years. V. G. Heiser.
118 *Experiments of Cultivation of Virus of Rinderpest in Vitro. W. H. Boynton.
119 Atypical Case of Rinderpest in Carabao. W. H. Boynton.
120 Experiments on Transmission of Rinderpest. A. R. Ward, F. W. Wood and W. H. Boynton.
121 *Intestinal Parasitism, Particularly Entamebiasis, in Patients of Philippine General Hospital, Manila. D. G. Willets.
122 *Treatment of Entamebiasis with Ipecac, Emetin and Neosalvarsan at Philippine General Hospital, Manila. D. G. Willets, C. R. Stanley and P. Gutierrez.
123 Nerve Degeneration in Fowls Fed on Unhusked Rice (Palay). R. B. Gibson and I. Concepcion.
124 Simultaneous Method of Inoculating Cattle and Carabaos with Serum from Animals that have Been Recently Immunized. A. R. Ward and F. W. Wood.

116. **Carriers of Asiatic Cholera.**—Barber found that cockroaches which have fed on human cholera feces may harbor cholera vibrios in their intestines, and these may appear in enormous numbers in the insects' feces for at least two days after the insects have fed, and may occur in smaller numbers seventy-nine hours after ingestion. By means of both feces and vomit, cockroaches may act as carriers of cholera to human food. Cholera vibrios in cockroach feces will survive on human food at least sixteen hours after discharge from the insect, and cholera vibrios in human feces will survive, in competition with numerous other bacteria, on food at least four days. There is no loss of virulence for guinea-pigs in cholera vibrios after twenty-nine hours in the intestine of the cockroach. Cholera vibrios may be found in the bodies of ants at least eight hours after they ingested cholera cultures or human feces from cholera patients.

118. **Cultivation of Virus of Rinderpest.**—The virus of rinderpest has been carried in virulent form by Boynton in two separate series up to the sixth transfer in glucose blood-culture media, covering periods of nineteen and twenty-one days, respectively. In one series the medium first inoculated was non-virulent at the end of twelve days, while the fourth transfer from this tube of culture medium after the same period of time was virulent. Results obtained from numerous experiments indicate that fresh blood from non-immune cattle as a main constituent and glucose as an addition are essential components of the culture media. The virus of rinderpest requires either partial or complete anaerobic conditions for its existence.

121. **Intestinal Parasitism.**—Entamebic infections were found by Willets in 37.5 per cent. of the 1,000 individuals examined, in 38.8 per cent. of 900 Filipinos, in 26.0 per cent. of 100 Americans; in 46.3 per cent. of 417 adult female Filipinos, in 34.2 per cent. of 383 adult male Filipinos, in 25.0 per cent. of 100 Filipino children, in 25.4 per cent. of 71 adult male Americans, and in 27.6 per cent. of 29 adult female Americans. Double infections were found in 59.2 per cent., pure *E. coli* infections in 35.5 per cent., pure *E. histolytica* infections in 5.3 per cent., *E. coli* infections in 94.7 per cent. and *E. histolytica* infections in 64.5 per cent. If more stools had been examined of each patient, it is believed that the positive percentage would have been about 55 instead of 37.5. Willets holds that diagnosis of entamebic infection should be made not only on the presence of active, but also on that of quiescent or encysted forms. The one safe stage of development for a differential diagnosis between *E. coli* and *E. histolytica* is the encysted form encountered in formed stools. Willets suggests that it is probable that in dysenteric stools active *E. coli* closely resembles active *E. histolytica* in motility and general appearance without a corresponding change in its nuclear structure.

122. **Treatment of Entamebiasis.**—The 132 cases of entamebiasis considered by Willets consist of 27 dysenteric and 105 non-dysenteric cases. The dysenteric cases are divided into 11 treated with emetine and 16 with ipecac; the non-dysenteric, into 44 controls—34 treated with ipecac, 19 with emetine, and 8 with neosalvarsan. Prophylaxis against the occurrence of entamebic dysentery in an infected individual and against carriers of *Enatameba histolytica* consists in (1) making a differential diagnosis between *E. coli* and *E. histloytica* and treating only those infected with the latter species or (2) treating all persons indiscriminately who are infected with entameba. Prophylactic treatment should be confined to expelling entameba from the intestinal tract. In order that such a treatment may be used widely, it must be inexpensive, give good results quickly, and the method of administration must be simple and unattended by prolonged unpleasant reaction.

Four preparations are now in use for entamebiasis—ipecac, emetine, neosalvarsan and bismuth. Results obtained in non-dysenteric entamebiasis with salvarsan and with neosalvarsan indicate that this treatment may prove to be the most efficacious in quickly relieving the dysenteric symptoms and expelling entameba from the intestinal tract. More than three consecutive negative examinations are required before one may state with safety that a person is free from entameba, provided four cover-glass preparations be examined of each specimen. Rest and diet influence the clinical evidences of entamebic dysentery favorably, and Willets' results in control cases tend to show that they are to be reckoned with in the elimination of entameba from the intestinal tract. In dysenteric cases emetine gave a larger percentage of symptomatic cures and acted quicker in this class of cases than ipecac. Emetine and ipecac were about equally efficacious in expelling entameba from the intestinal tract. The time required to expel the entameba with the two preparations was also about equal.

In non-dysenteric cases neosalvarsan freed the bowel of entameba in 100 per cent. of cases, ipecac in 70.6 per cent., and emetine in 36.8 per cent. From the last two percentages an undetermined factor which is less than 25 per cent. must be subtracted, because this percentage of cases would have given 2 consecutive final negative examinations (an arbitary standard adopted for comparative purposes) in the time limits without treatment.

South Carolina Medical Association Journal, Seneca

June, X, No. 6, pp. 544-574

125 Certain Medical Aspects of Alien Race Problem. C. W. Stiles, Washington, D. C.
126 Successful Treatment of Autotoxemia and Lesions of Large Bowel, Including Appendix. F. Moore, Montmorenci, S. C.
127 Diagnosis and Treatment of Diarrhea. G. M. Niles, Atlanta, Ga.

Southern Medical Journal, Nashville, Tenn.

July, VII, No. 7, pp. 519-596

128 *Etiology of Pellagra: Experimental Inoculation of Monkeys and Rabbits. W. A. Dearman, Long Beach, Miss.
129 *Digestive Symptoms of Pellagra. S. Harris, Mobile, Ala.
130 First (?) Symptom in Pellagra. T. Frazer, Asheville, N. C.
131 Cerebrospinal Meningitis. R. Lyons, New Orleans.
132 *Subcutaneous Medication in Anemias. M. K. Robbie, San Antonio, Tex.
133 Case of Multiple Mycotic Aneurysm of Aorta. H. L. McNeil, Houston, Tex.
134 Treatment of Fractures of Femur with Hodgen's Splint. W. M. McCabe and J. F. Gallagher, Nashville.
135 Lesions of Sacro-Iliac Joint. J. P. Chapman, Mobile, Ala.
136 Tumors of Carotid Gland. J. Funke, Atlanta, Ga.
137 Postoperative Complications of Abdominal Section and Their Treatment. R. Wallace, Chattanooga.
138 Rarity of Certain Variety of Persistent Hyaloid Artery. Report of Case. R. M. Nelson, Atlanta, Ga.
139 Cataracta Complicta Similar to Senile Cortical Cataracts. A. B. Mason, Waycross, Ga.
140 Typhus Fever: Report of Four Cases. L. B. Newell and W. Allan, Charlotte, N. C.
141 Practical Sanitation for Small Cities and Towns. R. L. Robertson, Charlottesville, Va.
142 Alcoholism and Drug Addictions among Physicians in Alabama. W. D. Partlow, Tuscaloosa, Ala.
143 Treatment of Pus Appendix. G. H. Bunch, Columbia, S. C.
144 Field of Neurologic Surgery and Its Relation to Other Branches. C. M. Remsen, Atlanta, Ga.
145 Plea against Still Too Frequent Sacrifice of Turbinates. R. W. Bledsoe, Covington, Ky.
146 Broncho-Esophagoscopy. E. W. Carpenter, Greenville, S. C.

128. **Etiology of Pellagra.**—Samples of cornmeal were obtained by Dearman from pellagrous homes and from local dealers. Moulds were cultivated, isolated aerobically and anaerobically, suspended in physiologic salt solution, and experimentally injected and fed to rabbits, chickens, pigs and monkeys. Neither ever developed any lesions resembling pellagra. He believes that pellagra is an insect-borne disease, and that dog and cat fleas should be looked on with suspicion, not to the exclusion of other possible transmitters.

129. **Digestive Symptoms of Pellagra.**—In beginning the treatment of pellagra, Harris usually gives several small doses of calomel, 1/20 grain every hour until ¼ grain is given, then bismuth subnitrate in from ½ to 1 dram doses, with 5 grains of salol every two to four hours as may be necessary to control diarrhea. He has rarely found it necessary to use opium. Where there is absence or deficiency of hydrochloric acid, dilute hydrochloric acid with pepsin often relieves the gastric symptoms and will not infrequently control diarrhea. Colonic irrigations with normal salt solution are often helpful, and, in some cases, in which there is pain in the rectum, anodyne suppositories give great relief. When there is stomatitis with ptyalism the chlorate of potash given internally yields splendid results. Mild antiseptic mouth washes, as diluted liquor antisepticus alkalinus are helpful. Fowler's solution should be given in ascending doses of from 1 to 15, or even 20 drops three times a day, or until the physiologic effects are obtained. Harris has used atoxyl in a number of cases but has not been pleased with the results. He is inclined to think that the arsenic must be taken into the alimentary canal to get the beneficial results.

132. **Subcutaneous Medication in Anemias.**—Robbie's experience in subcutaneous and intramuscular medication has been principally and chiefly in the anemias of malaria and those resulting from gastro-intestinal disturbances. The preparation Robbie has been using is 5 to 6 grains of citrate of iron, 1 to 6 grains sodium arsenate and 1 to 120 grains of strychnin sulphate put up in small sterile ampules and given once or twice daily as the case required.

FOREIGN

Titles marked with an asterisk (*) are abstracted below. Single case reports and trials of new drugs are usually omitted.

British Medical Journal, London

July 4, II, No. 2792, pp. 1-52

1 British Medical Association in Australia. J. A. MacDonald.
2 Three Cases of Fracture in Neighborhood of Joints Treated by Plating. G. H. Colt.
3 *Hemostasis by Application of Living Tissue. V. Horsley.
4 New and Economical Method of Radium Therapy by Means of Emanation Needles. W. C. Stevenson.
5 Roentgen-Ray Treatment of Tuberculous Glands. H. Mowat.
6 Suspected Case of Foot and Mouth Disease in Man. V. Whitby.
7 *Clinical Test for Estimation of Percentage of Glucose. G. C. Parnell.
8 Case of Cyclopia. D. Dougal and T. M. Bride.
9 Case of Left Duodenal Hernia in Child. F. C. Pybus.
10 Reduction of Old Elbow Dislocation by Operation. F. D. Bird.
11 Napthalene for Destruction of Mosquitoes in Covered Cisterns and Wells. A. W. Bacot.

3. **Hemostasis by Application of Living Tissue.**—To stop bleeding and hemorrhage oozing from soft tissues other than by the employment of a ligature, or pressure with a guaze tampon, or by irrigation with hot liquid, Horsley uses living vascular tissue—that obtained from the (injured) surface of a cut fragment of muscle. If the bleeding point—for example, from the cut surface of the brain, liver, or any soft tissue—be gently pressed with gauze, and this instantly replaced by a piece of living muscle, and pressure again applied from fifteen to twenty seconds, it will be found that the muscle fragment closely adheres to the tissue it is applied to. Such adhesion is necessarily limited by the pressure at which the blood is escaping from the bleeding point.

By direct experiment on divided arteries (including the aorta) in the cat and dog, Horsley found that a muscle hemostasis would resist as much as 60 to 80 mm. Hg blood-pressure. Further histologic investigation of the exceedingly thin viscous layer occupying the plane of contact of the two masses of tissue shows that it contains blood-platelets, fibrin, fibrils, etc., in a considerable degree, and within a short time (five to ten minutes) of commencing the preparation. To estimate the degree of active thrombokinesis Horsley also tested the utility of the muscle after it had been boiled for five minutes at 100 C. Such boiled tissue had a very poor hemostatic effect. It seemed as if this was partly owing to the great loss of adhesiveness which is caused by the heat coagulation completely altering the physical surface of the muscle tissue. Of other tissues Horsely has only exhaustively tried fascia, and with the result that it has not proved satisfactory. It has not the factor of adhesiveness sufficiently well marked, though it can be employed when it is not convenient to take a piece of muscle.

7. **Estimation of Percentage of Glucose in Urine.**—Parnell demonstrated that with Moore's test the colors resulting from boiling equal parts of diabetic urine with liquor potassae do vary in direct proportion to the amount of glucose that exists in samples under examination. To obtain accurate results the amount of diabetic urine or manufactured solutions must be boiled with equal parts of liquor potassae; there must be no guess-work. Each sample must be boiled thoroughly. The test-tubes should not be larger or smaller than five-eighths to six-eighths of an inch in diameter, and the liquor potassæ should be fresh. The resultant color when

found to correspond with any of the test-glasses, will give the percentage, the grains per ounce, or the parts per 1,000, multiplied by 2. Parnell uses for estimation colored glasses showing the exact shades of the different solutions containing known amounts of glucose. On each glass, the size of a microscopic slide, is marked the percentage, the number of grains per ounce, and the number of parts per 1,000.

Edinburgh Medical Journal

July, XIII, No. 1, pp. 1-96

12 Empyema in Children. *H. G. M. Dunlop.*
13 New Route of Inquiry as to Nature and Establishment of Typical Sex-Ensemble in Mammalia. (To be continued.) *D. B. Hart.*
14 Anaphylaxis and Status Lymphaticus: Their Relation to Intensified Types of Disease in Infancy and Childhood. (To be continued.) C. M'Neil.
15 *Recurrent Luxation of Patella. D. M. Greig.
16 Dr. Thomas Spens: *First Describer of Stokes-Adams' Syndrome.* C. E. Lea.
17 Case of Chronic Primary Pneumococcal Cerebrospinal Meningitis. C. Kerr.

15. Recurrent Luxation of Patella.—In the treatment of recurrent luxation of the patella, confinement to bed and the application of splints are held by Greig to be unnecessary. He believes there is no actual surgical interference which will improve the condition unless such an obvious abnormality as knock-knee demands rectification. As long as violent games are avoided, he says, the recurrence of the dislocation may be prevented by the application of a firm and well-fitting leather knee-cap. The ordinary elastic knee-cap is neither adequate nor desirable, for its tightness is apt to bring about by pressure an atrophy of the underlying soft parts and interference with the circulation in the cutaneous veins. A soft leather knee-cap lacing up the side and with a hole for the patella is the cheapest in the long run and quite efficient.

Glasgow Medical Journal

July, LXXXII, No. 1, pp. 1-79

18 Working of Midwives Act (England, 1902). F. H. Champneys.
19 Operative Treatment of Fractures, with Special Reference to Plating. *G. H. Edington.*
20 Acute Suppurative Appendicitis: Analysis of One Hundred Consecutive Cases. R. B. Carslaw.

Lancet, London

July 4, II, No. 4740, pp. 1-74

21 Hygienic Aspect of Coal-Mining Industry in United Kingdom. F. Shufflebotham.
22 *One Thousand Consecutive Abdominal Operations. A. E. Giles.
23 Diseases of Pituitary Gland and Their Effect on Shape of Sella Turcica. E. G. Fearnsides.
24 Case of Triplets Successfully Breast-Fed. J. Morrison.
25 Pathologic Investigation of Four Cases of Pituitary Tumor. W. Johnson.
26 Removal of Foreign Body from Larynx by Suspension of Laryngoscopy. D. McKenzie.
27 Milk and Dairies Bill and Bacteriologic Examination of Milk. R. T. Hewlett.

22. One Thousand Consecutive Operations.—The table of cases cited by Giles shows that there was a marked drop in the mortality of the last 500 as compared with the first 500, the percentage being 3.4 in the later series and 5.2 in the earlier. The improvement is attributed to: 1. The personal factor of experience. 2. A higher standard of asepsis. 3. Improved technic. Ovariotomy.—165 cases, 6 deaths, mortality 3.6 per cent. Every kind of ovarian tumor was met with in these cases: multilocular cystic adenoma; papilloma; dermoid, unilateral and bilateral, and including some of the relatively rare cases of dermoid contents in multilocular tumors; parovarian cyst; blood-cyst (lutein hematoma); fibroma; carcinoma, and sarcoma. There were a good many cases with acute symptoms due to twisted pedicle, and several with rupture of the cyst. Tubal inflammatory disease, 154 cases, 12 deaths; extra-uterine pregnancy, 65 cases, 1 death; hysterectomy for fibroids, 208 cases, 7 deaths; hysterectomy for carcinoma, 37 cases, 1 death; myomectomy, 30 cases, no death; hysteropexy, 222 cases, 30 deaths; non-gynecologic operations, 119 cases, 13 deaths.

Speaking of drainage, Giles says that generally drainage should be avoided, if possible, but in certain cases it is essential, and because the danger in this respect of leaving undone the things that ought to be done is greater than that of doing the things that ought to be done he would say, "When in doubt, drain." The cases in which he drains are those with a considerable tendency to oozing from adhesion sites; cases in which the peritoneal cavity has been soiled with pus from the rupture of pus-tubes or the presence of an appendix or other abscess in the peritoneal cavity; cases of peritonitis without actual pus formation, when he is doubtful about the degree of virulence of the infection; and cases in which the bowel walls have been much damaged in the process of separating adhesions.

Practitioner, London

July, XCIII, No. 1, pp. 1-156

28 Diagnosis and Treatment of Tropical Hepatic Abscess. D. Duckworth.
29 Necessity for Systematic and Complete Examination of Nervous System in Medicolegal Cases. J. Collie.
30 Traumatic Neurosis. *J. W. G. Grant.*
31 Pyrexia of Obscure Origin. G. N. Pitt.
32 Plea for More Systematic Employment of Treatment by Suggestion. *M. Telling.*
33 Use of Therapeutic Suggestion. R. G. M. Ladell.
34 Psycho-Analysis. C. E. Long.
35 Cases of Obstetric Interest. S. Sheill.
36 Occurrence of Pellagra in England. R. W. Willcocks.
37 Experiments in Connection with Orthostatic Albuminuria. F. D. Nicholson.
38 Work on Children's Diseases. *H. Thursfield.*
39 Difficulties in Tuberculin Administration. A. H. G. Burton.
40 Two Cases of Schlatter's Sprain. R. Connell.

Quarterly Journal of Medicine, London

July, VII, No. 28, pp. 325-495

41 *Aggressins in Appendicitis and Some Other Varieties of Peritonitis. A. D. Gardner.
42 *Leukemias: An Analysis of Fifty-Nine Consecutive Cases. P. N. Panton, H. L. Tidy and G. H. Pearson.
43 *Fragility of Red Blood-Corpuscles in Physiologic and Pathologic States. A. D. Bigland.
44 *Case of Very Prolonged Cheyne-Stokes Breathing. W. H. White, J. H. Ryffel, E. P. Poulton, W. Johnson and R. A. Chisolm.
45 Importance of Functional Activity in Etiology of Nervous Diseases. W. Johnson.
46 Blood-Pressure Estimations in Disease by Oscillatory and Auditory Methods. G. S. Melvin and J. R. Murray.
47 Formation of B-Iminazolylethylamine in Ileum of Certain Constipated Subjects. N. Mutch.
48 Family Cerebral Degeneration with Macular Change (So-Called Juvenile Form of Family Amaurotic Idiocy). F. E. Batten.
49 Diagnosis of Pancreatic Disease. A. F. S. Sladden.

41. Aggressins in Appendicitis and Peritonitis.—The study of aggressins in the peritoneum leads Gardner to the conclusion that in the treatment of several varieties of peritonitis, closer attention might with advantage be paid to the question of bacterial multiplication, and to the direct means which are open to the surgeon of checking it. A considerable number of peritoneal exudates were tested for aggressive action (inhibition of phagocytosis *in vitro*). Gardner believes that aggressiveness is the direct consequence of a profuse multiplication of bacteria. The greater the number of bacteria, the more likely is the fluid to act aggressively. Early exudates therefore (first twenty-four hours) are never aggressive. Aggressive substances are nearly always present in pus from appendicular abscesses, and they do no harm so long as the abscess wall remains intact. But they may play an important and dangerous part when a channel of communication is formed between the abscess cavity and the general peritoneum. In spreading or already diffuse peritonitis, the formation of aggressive bodies, signifying as it does great bacterial activity, marks the onset of a graver stage of the infection. A consideration of aggressins, their origin and their action, suggests that a discriminating use of bactericidal chemicals may be of great value in the surgical treatment of peritonitis. In ether and colloidal silver Gardner has two such bodies which have undergone a successful trial.

42. Leukemias.—Of 59 consecutive cases of leukemia examined by the authors, 16 have been classed as acute myeloid, 29 as chronic myeloid, 8 as acute lymphoid leukemia, and 6 as chronic lymphoid. They state that it is evident that the clinical picture of leukemia varies with the acuteness or chronicity of the disease, and not with the lymphoid or myeloid origin of the cells. Acute lymphoid and acute myeloid leukemia are clinically indistinguishable, and so may be chronic lymphoid and chronic myeloid leukemia. Acute lymphoid leukemia has little resemblance to chronic lymphoid, nor acute myeloid to chronic myeloid, except in so far as chronic myeloid may terminate by a condition similar to the acute disease. It is impossible to distinguish by a blood examination between the acute and chronic types of myeloid leukemia, but not between acute and chronic lymphoid leukemia. The latter diseases are readily distinguished on clinical grounds. Acute myeloid and acute lymphoid leukemia can be distinguished by the type of cell present, but the conditions have been frequently confused and the clinical course is the same. The confusion has been due to a failure in distinguishing between myeloblasts and lymphocytes. The differentiation is rarely if ever difficult for those accustomed to the use of Leishman's or other similar stains. In this connection they have found the oxydase reaction to be quite useless. In no case in the authors' experience has the myeloid type of cell been replaced by the lymphoid type, or vice versa.

The effect of treatment in the acute cases has been negligible. In the chronic lymphoid cases, changes have been extremely slight. In the chronic myeloid cases, some have changed little, others have changed to a remarkable degree. Those cases which have fluctuated to the greatest extent have been the youngest subjects. The blood of patients over the middle age reacts but little. There has been no instance of purpura in either of the chronic leukemias. In those cases of acute leukemia associated with purpura the spleen was invariably enlarged. Infiltrations of the skin, painful bones, and priapism occurred in no case. Oral sepsis did not appear to have any bearing on any type of the disease.

The cases of acute myeloid leukemia include an interesting group of four patients whose predominant blood-cell was a so-called Rieder cell. This cell the authors believe to be a large hyaline, partly on morphologic grounds since the cell may be indistinguishable from the large hyaline of normal blood, and intermediate types between the normal cell and the primitive marrow-cell were numerous; partly on functional grounds, because these cells were actively phagocytic as are those of the normal blood. They consider that a scrutiny of these cases affords strong evidence of the marrow origin of the large hyaline cell.

43. **Fragility of Red Blood-Corpuscles.**—The following method for estimating the fragility of the red blood-corpuscles was advised by Bigland and has worked very successfully. A saponin solution of 1 in 1,000 strength was made up with normal saline solution; this was kept as stock and renewed on one occasion during the work. For use, 5 c.c. of this saponin solution were diluted with 45 c.c. of saline and placed in a burette. Thus the strength of saponin actually used was 1 in 10,000 dilution. A few drops of blood were allowed to flow from a needle prick into tubes containing normal saline mixed with sufficient quantity of a citrate to prevent clotting and maintain the correct tonicity of the solution. This suspension of red blood-corpuscles was then centrifugalized for ten minutes and the supernatant fluid poured away, the resulting corpuscles being regarded as "washed."

When the patient's corpuscles in contact with the serum were examined the blood was drawn up into Zeiss white corpuscle counting pipet (up to the second division on the tube) and the contents transferred to small tubes (those used in the final experiment) filled with an amount of saline solution such that when the saponin solution is added later on the total bulk will be 3 c.c. When the patient's serum alone was required, free from red blood-corpuscles, the blood was collected in Wassermann tubes. These were centrifugalized, then placed in an incubator at 37 C. for half an hour to shrink the clot, and then were centrifugalized again. The resulting serum was drawn off by a similar Zeiss pipet, only this time up to division 1 on the scale.

One to 2 c.c. of saponin is regarded as the standard, and therefore the tubes containing the abnormal red blood-corpuscles to be tested will also have 1-2 c.c. of saponin added to them. The reason for fixing this standard at 1-2 c.c. of saponin is solely for the sake of convenience; normal corpuscles laking with this amount of saponin in about four minutes. Bigland found that human red blood-corpuscles show a constant figure of resistance toward saponin hemolysis. The serum is markedly protective against the action of saponin, but this power varies within certain limits. The corpuscles of various animals show marked variation in their fragility.

In jaundice the resistance of the washed red blood-corpuscles is markedly diminished, while the protective action of the serum is markedly increased. This latter result is not due only to the antagonistic action of saponin and bile salts. In all the anemias, except pernicious anemia, the corpuscular resistance is increased. In pernicious anemia it is normal or slightly diminished. In splenic anemia there is great increase in corpuscular resistance, and the serum appears to have no protective reaction. In the anemia found in malignant disease, syphilis, tuberculosis, scurvy, amyloid disease, and myelogenous leukemia, and in a case of splenectomy there was an increased corpuscular resistance. In diabetes the corpuscular fragility is normal, while the serum in some cases is abnormally protective. In exophthalmic goiter and paroxysmal hemoglobinuria the corpuscular fragility is normal. In polycythemia the resistance is increased. A high temperature appears to increase corpuscular fragility.

44. **Case of Prolonged Cheyne-Stokes Breathing.**—In the case cited Cheyne-Stokes breathing lasted certainly six months, and from the account given by the patient's wife possibly for very much longer. It was present during both sleeping and waking. Although the patient was, as shown by the condition of the retina, the hypertrophy of the heart, and the high blood-pressure, an example of arteriosclerosis, yet the post-mortem examination disclosed that the arterial change was not extensive, for the arteries in the brain were normal, as were many of those in the kidneys, and these organs were not advanced beyond an early granular change. The composition of the alveolar air was determined on several occasions, and it was possible to confirm the findings of previous observers. Observations on the blood dissociation curve by Barcoft's method showed that the blood was abnormally acid, and the authors obtained proof that the respiratory center suffered from diminished excitability. Analysis of the urine and blood proved that lactic acid was not the cause of the increased acidity of the blood. Histologic examination of the respiratory center showed changes similar to those already described by previous observers, although it was impossible to say whether they were the result or partly the cause of the Cheyne-Stokes breathing.

Archives des Mal. de l'App. Digestif, Paris

May, VIII, No. 5, pp. 241-300

50 *Pyloric Stenosis with Hypertrophy in Man of 58. H. Hartmann.*
51 *Retention of Salt and Elimination of Excess in Gastric Juice. (Les hyperchlorhydries éliminatrices.) H. Surmont and M. Dehon.
52 *Anachlorhydria with Gall-Stones; Twelve Cases. T. Hernando.
53 Dialysis Test of Stomach Content. (Les matières dialysables du contenu stomacal décelables par la réaction de la ninhydrin.) Wasserthal.

51. **Vicarious Hyperchlorhydria.**—Surmont and Dehon think that defective elimination of salt by the kidneys is often compensated for by hyperchlorhydria, the true cause of which, the defective functioning of the kidneys, may escape detection. They report six typical cases, calling attention to the return to normal in the stomach conditions as soon as the kidneys began to do their work properly. This eliminating or vicarious hyperchlorhydria may be the very first sign of latent cardiorenal mischief. The acidity may become so extreme as to entail erosions and ulceration.

52. **Gastric Hypo-Acidity and Gall-Stone Disease.**—Hernando reports twelve cases in which gastric secretion reached

its lowest ebb in connection with cholelithiasis. The anachlorhydria may be either primary or secondary or both. In one case the anacidity long preceded the gall-stone trouble and possibly may have been a causal factor in the latter. His experience with drugs to supply to some extent the lacking gastric acid confirmed the connection between the stomach and bile apparatus trouble, as some of the symptoms of the latter showed marked improvement as conditions became more normal in the digestive tract.

Archives de Médecine des Enfants, Paris

May, XVII, No. 5, pp. 321-400

54 Sugar in Large Doses in Treatment of Incessant Vomiting in Infants and of Athrepsia. P. Nobécourt.
55 Teething. (La dentition chez les enfants.) J. Comby.
56 Spasmodic Contraction of the Scapular Muscles. (Attitude vicieuse de l'omoplate.) M. N. Wilbouchewitch.
57 Generalized Gonorrhea in Girl of 2½; Recovery under Immobilization of Joints. H. Schwers.
58 Cerebellar Ataxia in Children. J. Comby and A. D'Espine.

Journal de Chirurgie, Paris

June, XII, No. 6, pp. 689-854

59 *Operative Treatment of Echinococcus Disease of the Liver Perforating into the Bile Passages. (Kystes hydatiques du foie.) P. Lecène and H. Mondor.
60 *Technic for Resection of the Colon. (Colectomie totale et colectomie sous-cecale.) G. Lardennois.

59. **Perforation of Echinococcus Cyst into Bile Passages.**—Lecène and Mondor relate a case of this kind in a young man. The first signs of trouble two years before were diagnosed as typhoid at the time. Eight and fourteen months later he had attacks of pain diagnosed and treated as gall-stone colic. Then fever and jaundice developed and the stools became clay-colored, with other symptoms indicating mischief in the bile ducts. The operation revealed a large echinococcus cyst in the liver with an opening into the common bile duct. They have found 30 analogous operative cases on record, the various conditions encountered requiring seven different technics. The mortality was about 33 per cent.; success depends on the possibility of thorough draining of the bile duct involved.

60. **Resection of the Colon.**—Lardennois gives an illustrated description of a technic which he thinks is superior to Lane's method of short-circuiting in that it takes better account of the special anatomy of the region; does not sacrifice the greater omentum; and the pelvis is raised while the intestine is being cut and reunited, but the chief advantage of his technic is in the preservation of the cecum, the operation being a subcecal colectomy with anastomosis between the cecum and the sigmoid flexure. By thus saving part of the cecum we avoid the pains of the period during which the small intestine is adapting itself to the new conditions.

Lyon Médical

XLVI, Nos. 25-26, pp. 1369-1512

61 The Doctor's Wife. (La femme du médecin.) Aubert.
62 Dietary Deficiency Diseases in Pigeons. (Les maladies alimentaires par "carence.") E. Weill and G. Mouriquand.

Presse Médicale, Paris

May 6, XXII, No. 36, pp. 341-348

63 How to Administer Digitalis. A. Martinet.
64 *Injection of Serum into Perineum Liable to Cure Enuresis. Cahier.

64. **Serotherapy for Nocturnal Enuresis.**—Cahier makes a subcutaneous injection of physiologic salt solution directly into the perineum, each side of the raphe. The fluid must be forced in rapidly, the aim being to act on the nerve terminals in the region by pressure from the huge blister thus formed. For adults he injects from 80 to 100 c.c. on each side. He has been applying this measure—which, he remarks, is comparatively simple and entirely harmless—since 1906 and has now a record of 30 cases, with a complete cure of the annoying night enuresis in 18 after a single injection. In 6 cases a second or third injection was required, and in 6 others no benefit was realized. The patient is awakened at night by the desire to urinate, and is thus able to control the process where before it proceeded automatically without awakening him. Cahier cites a number of other army doctors who have had gratifying results with this method in a very large proportion of their cases. Gauléjac has reported 50 per cent. cured in 150 cases in children; he restricts the amount of fluid to 40 or 60 c.c. so as not to stretch the child's skin unduly.

Revue de Médecine, Paris

June, XXXIV, No. 6, pp. 393-472

65 Measurement of the Pressure of the Cerebrospinal Fluid. (Manométrie clinique.) H. Claude, R. Porak and J. Rouillard.
66 Diagnosis of Cancer, etc., from Cells Found in Stomach Content. (Le cyto-diagnostic des liquides gastriques.) E. Caussade.
67 Glycosuria Induced in Dog by Intravenous Injection of Cerebrospinal Fluid from Acromegaly Patient. L. Lévy and R. Boulud.

Semaine Médicale, Paris

July 1, XXXIV, No. 26, pp. 301-312

68 *Retention of Different Elements of the Bile. (Les retentions bilaires par lésion de la cellule hepatique.) A. Lemierre, M. Brulé and H. Garban.

68. **Retention of Bile from Functional Incapacity of the Liver.**—This article is practically a summary and continuation of the article reviewed in these columns July 25, p. 356. The writers comment on the fact that three different scientists by different technics arrived almost simultaneously at the same conclusion in regard to the retention of different elements of the bile, namely, *that only the liver cell itself is capable of discriminating in this way.* Mechanical retention of bile is always of the whole bile. The positive findings of dissociated retention were always in affections known to have an injurious influence on the liver, especially typhoid, pneumonia, septicemia of different origins, tuberculosis and appendicitis, lead poisoning, alcoholism, pregnancy, heart disease, and after general anesthesia, particularly with chloroform.

Archiv für Kinderheilkunde, Stuttgart

LXIII, Nos. 1-2, pp. 1-160. Last Indexed July 25, p. 357

69 *Cyclic Vomiting in Children and Its Causes. (Mit Acetonurie einhergehende periodische Erbrechen im Kindesalter.) H. Zade.
70 Albumin Milk in Infant Feeding. (Erfahrungen über die nach Verfahren von Engel hergestellte Eiweissmilch.) B. Leichtentritt.

69. **Cyclic Vomiting in Children.**—Zade presents arguments to show that the cyclic vomiting is the result of a sudden psychogenic upset of carbohydrate metabolism plus irritation of the vomiting center. The primal cause is, he assumes, of mental or emotional nature, and it is able to produce this effect only at certain periods. As the primal irritation subsides, the disturbances right themselves at once. Cases are known in which sudden fright has brought on severe diabetes, fatal coma following close on the suddenly appearing glycosuria. He has had a case of this kind, a healthy man barely escaping with his life in an accident, and dying in coma within a few months. Zade thinks that cyclic vomiting is a somewhat similar phenomenon. A psychogenic origin alone explains the sudden onset and the equally abrupt termination of the attack, the absence of nausea, the lack of influence from drugs and dieting, the odor of actone in the breath before the attack is actually installed and the cerebral nature of the vomiting act, so unmistakably a reflex process from excitation of the vomiting center. The result is—on a small scale—an acidosis like that of diabetes, and treatment should be with an alkali and sugar or sweet fruit juice, the same as for impending diabetic coma. These generally suffice as the trouble, he says, seems to be more a relative acidosis than alkali starvation. Saline infusion and warm baths may prove soothing and counteract the excessive loss of fluids in the vomiting.

He reviews the literature and reports in detail a case from his own practice in a boy 5½, well nourished, but with an inherited nervous taint and the exudative diathesis. The periodicity is best explained by Fliess' theory of periodic days. Of course cyclic vomiting may be associated with appendicitis or digestive disturbances, etc. The clinical picture of acetone vomiting may also be induced by such, and cease when they are cured, but these cases are not the true cyclic vomiting which occurs—he remarks parenthetically—only during the years when the thymus is at its prime. No case is known after the age of 13. In the personal case reported what seemed to be an impending attack was warded off by having the child drink half a glass of water containing sugar and 5 gm. of sodium bicarbonate repeated the next evening.

Berliner klinische Wochenschrift, Berlin

June 29, LI, No. 266, p. 1205-1252

71 *Laminectomy for Spondylitic Paralysis. A. Tietze.
72 Brace Cures Snapping Hip Joint. (Zur Therapie der schnappenden Hüfte.) G. Müller.
73 Transmission of Hodgkin's Disease to Guinea-Pigs. (Uebertragung von Lymphogranulomatosis auf Meerschweinchen.) E. Schaeffer.
74 Organotherapy with Alkaloids from Ductless Glands. C. W. Rose.
75 *Dulness over the Sound Apex in Children. (Die Spitzendämpfung im Kindesalter.) F. Mielke.
76 Refusal to Permit Operation in Its Bearing on Workmen's Compensation and Personal-Injury Suits. (Zur Frage der Ablehnung des Schadenersatzes wegen Verweigerung von Operationen.) H. Lieske.

71. **Laminectomy for Spondylitic Paralysis.**—Tietze reports fourteen cases of paralysis from compression of the spinal cord by diseased vertebrae in which he sought to remedy conditions by operative measures when the paralysis passed from the spastic into the flaccid form, showing the progressive nature of the lesion, after failure of extension treatment. Success can be anticipated usually only when the anatomic findings indicate compression from displacement of bones rather than from inflammatory granulations. He says that at first he made the mistake of trying to do too much and tamponing. The outcome was much better when he restricted his intervention to removing the arches, the perimeningitic granulations at the rear, and, when readily accessible, also at the sides, but refraining from working too far forward. In two cases he found relics of old neuritis in the roots and there was much pain. Marked benefit was realized only in 3 cases. One was a boy of 9, the others were young men with extensive kyphoscoliosis of a tuberculous nature. Marked improvement slowly followed extensive laminectomy. Five of the patients died from the operation and the others in the course of the following two years, the majority surviving about six months. At first there was considerable improvement but it did not last.

75. **Dulness over the Apex in Children.**—Mielke has found that a pathologic dulness over the apex is often simulated by conditions resulting from weakness of muscles which prevents the child from holding himself normally. As this condition is usually accompanied by pallor and lassitude, tuberculosis is incriminated. The evidence against this includes the shifting of the dulness to the other apex as the child sits or stands. He is convinced that in many cases of supposed tuberculosis the alleged signs are in reality merely the effect of the way the child stands. He encountered eighteen such cases during a recent four-month period. All treatment tending to strengthen the muscles aids in throwing off this anomaly.

He differentiates it by examining in various positions, especially when the child relaxes all its muscles. This is best realized by having the child stoop forward a little, its arms hanging loose, the abdomen drawn in. Of course it has long been known that scoliosis may induce dulness over the apex but Mielke thinks that no one has appreciated hitherto the importance in this line of even a very slight tendency to an asymmetrical attitude.

Deutsches Archiv für Klinische Medizin, Leipzig

CXV, Nos. 3 and 4, pp. 207-398. Last indexed July 25

77 Vasoconstricting and Vasodilating Substances in the Blood. Experiments on the Isolated Heart. H. Hermel.
78 Kidney Disease with Salt Retention. P. v. Monakow.
79 Experimental Study of the Physiology and Pathology of Cholesterin Metabolism, Especially in Pregnancy. K. Havero.
80 Diagnosis of Adherent Pericardium. (Herzbeutelverwachsungen.) E. Edens and W. v. Forster.
81 Chloroma a Myeloblastic Tumor. (Chlorom und seine Beziehungen zur Myeloblastinleukämie.) K. Emden.
82 Refraction Index of Blood Sera and Transudates. J. Löwy.
83 Morphology of Renal Secretion and Absorption. M. Landau.
84 Permanently Irregular Pulse: Pathologic Anatomy. A. Jarisch.
85 Purin Enzymes in the Lung in Pneumonia. E. R. Long and H. G. Wells (Chicago).
86 Uric-Acid Content of the Blood in Diagnosis. R. A. Kocher.

Deutsche medizinische Wochenschrift, Berlin

July 2, XL, No. 27, pp. 1353-1408

87 *Obstetric Hemorrhage. (Behandlung bedrohlicher Blutungen nach der Geburt.) P. Jung.
88 Recurrence of Experimental Trypanosomiasis. H. Ritz.
89 *Hyperglycemia in Elderly Diabetics. (Die Erhöhung des Blutzuckers bei greisen Zuckerkranken.) F. Hirschfeld.
90 Relations between the Spleen and the Liver Stellate Cells. (Experimentelle Untersuchungen über das "Milzgewebe" in der Leber.) G. Lepehne.
91 Direct Laryngoscopy and Tracheobronchoscopy. Seyffarth.
92 Dialysis Serodiagnosis. (Abderhaldens Dialysierverfahren.) A. Bisgaard, A. Korsbjerg and O. Melikjanz.
93 Unfavorable Experiences with Friedmann's Treatment for Tuberculosis. (Erfahrungen mit dem Friedmannschen Tuberkulosemittel.) Schultes and E. Meinicke.
94 Hernia of the Diaphragm. (Zwerchfellbrüche.) W. Peters.

87. **Obstetric Hemorrhage.**—Among the various points emphasized by Jung in treatment of threatening hemorrhages after delivery, is that any attempt to tampon the uterus fails of its effect unless the uterus is packed clear down to the fundus; the tamponade should never be allowed to remain for more than twenty-four hours on account of the danger of infection. After delivery of the child, as long as the uterus feels hard and does not bleed, no attempt should be made to force out the placenta until at least forty-five minutes have elapsed; this law is frequently broken for various reasons but atony of the uterus is too often the penalty, with uncontrollable hemorrhage. Only in case of placenta praevia or premature separation of the placenta are earlier active measures justified. Atony is particularly liable to occur if the uterus has been abnormally distended by hydramnion, twins or hydrocephalus, or has been subjected to unusual strain at delivery from contracted pelvis, rigid soft parts or disproportionately large children. Also when the uterus has been rapidly evacuated by forceps or section before labor has been installed, and also when the woman has had similar atony of the uterus at preceding pregnancies; a habitual atony of the uterus may be feared. In all these circumstances 10 liters of boiled water kept at 40 or 50 C. should be in readiness, with material for tamponing and a rubber tube for the Momburg technic for belt constriction. No ergot should be given before expressing the placenta and the bladder should be empty at the time.

89. **Hyperglycemia in Elderly Diabetics.**—Hirschfeld calls attention to his report of two diabetic men of 69 and 72 who had an unusually high sugar content in the blood but it declined under restriction of albumin and increased intake of carbohydrates. He explains this as due to the more sluggish action of the kidneys in the elderly. Their kidneys are unable to throw off readily fluids and salts and this should be taken into account in the diet. He states that the elderly should not be allowed more than 70 gm. albumin. In the first case described the daily ration had been 120 gm. albumin; 100 gm. fat and 200 gm. carbohydrate. This was modified to 70 gm. albumin; 140 gm. fat, and 160 gm. carbohydrate, and the sugar in the urine dropped from 1.1 to 0.3 per cent. and the sugar in the blood from 0.35 to 0.16 per cent., with a blood-pressure of 138 and 136. In the second case the sugar in the urine dropped from 0.6 to 0.1 per cent.; in the blood from 0.28 to 0.14 per cent.; the blood-pressure from 128 to 124; the specific gravity of the urine from 1031 to 1025 and the nitrogen content from 18.06 to 10.04 gm. These changes were observed in ten days after the diet had been changed from the original 130 gm. albumin; 120 gm. fat, and 95 gm. carbohydrate to a ration consisting of 70 gm. albumin; 140 gm. fat, and 90 to 100 gm. carbohydrate. In both cases, when after this the intake of carbohydrates was increased, the sugar in the urine rapidly ran up. He suggests that these cases of high sugar content of the blood in the elderly may be regarded as a special form of renal diabetes, and the output depends essentially on the diet. Senile conditions and especially arteriosclerosis are probably responsible for this form.

Deutsche Zeitschrift für Chirurgie, Leipzig

CXXVIII, Nos. 5-6, pp. 433-628

95 Gunshot Wounds in Peace; 200 Cases. (Schussverletzungen im Frieden.) A. Hagentorn (Russia).

96 Tuberculosis of the Buccal Mucosa and Gums. (Zur Therapie der Tuberkulose der Mundschleimhaut und des Zahnfleisches.) A. Tiedemann.

97 Technic for Resection of the Stomach (Magenresektion). H. Finsterer.

98 Suspension and Points of Support for Artificial Limbs. (Künstliche Glieder.) J. Dollinger.

99 Primary Carcinomas of Middle Jejunum. F. Kaspar.

CXXIX, pp. 1-704. F. Trendelenburg Festschrift

100 *Cancer of the Larynx. (Kehlkopfkrebs.) A. Barth.

101 To Repair Defect Left after Operation on the Middle Ear. (Osteoplastischer Verschluss retroaurikulärer Oeffnungen nach Antrumoperationen.) Becker.

102 Operative Treatment of Acute Pancreatitis: Four Cases. Dreesmann.

103 *Ectopia Vesicae. (Zur Heilung der angeborenen Harnblasen- und Harnröhrenspalte.) W. Dünkeloh.

104 Symptomatology of Brachial Plexus Paralysis. (Stammneurom des Plexus brachialis und Symptomatologie der Wurzel-, Durchflechtungs- und End-Lähmungen des Plexus.) v. Gaza.

105 Raising the Pelvis. (Der Siegeszug der Beckenhochlagerung.) W. Meyer and E. Grunert.

106 Local Anesthesia for Abdominal Operations. (Oertliche Schmerzverhütung bei Bauchoperationen.) Hackenbruch.

107 Chronic Thyroiditis; Two Cases. (Eisenharte Strumitis.) Heineke.

108 Fibroplastic Appendicitis. A. Läwen.

109 Rupture of Kidney from Contusion; Forty-Seven Cases. (Subkutane Nierenruptur.) E. A. Lüken.

110 Advantages of Closing up the Pylorus with Every Gastro-Enterostomy; Fourteen Cases. (Pyloroplicatio et Pylorotorsio.) G. Mertens.

111 *Total Dislocation of Spine in the Neck. (Totalluxation der Halswirbelsäule.) H. Meyer.

112 Surgery of the Appendix. (Zur Chirurgie des Wurmfortsatzes.) W. Meyer (New York).

113 *Operative Mobilization of Ankylosed Joints and Ultimate Outcome. E. Payr.

114 Operative Treatment of Gastric Ulcer; Thirty-Two Cases. G. Perthes.

115 Retroperitoneal Cysts. H. Rimann.

116 *Suture of the Patella. (Zur Frage der offenen Patellarnaht mit Nachuntersuchungen.) W. Sandrock.

117 Inflammation in and around the Shoulder after Contusion. (Die Arthritis acromio-clavicularis als wichtiges Glied in der Pathologie der stumpfen Schulterverletzungen.) R. Sievers.

118 *Progress in Operative Treatment of Pulmonary Tuberculosis. M. Wilms.

119 Disturbance after Operations on the Cecum. (Beschwerden nach Blinddarmoperationen.) W. Wolf.

100. **Cancer of the Larynx.**—Barth reviews his experience with 70 cases, all but 16 in men. The lesion was in an early stage in 8 but only 3 were willing to be operated on, and these are in good health to date after intervals of fourteen, four, and one and a half years. In 12 other cases the larynx was removed and the 8 patients who survived the operation lived for periods of four to thirty months but then succumbed to metastasis.

103. **Operative Treatment of Exstrophy of the Bladder.**—Dünkeloh summarizes the first 7 cases operated on by Trendelenburg according to his method of mobilizing and reuniting the walls to make a bladder cavity, and 11 other cases in which this method was applied by others. To this list he adds 8 unpublished cases from Trendelenburg's records. Complete continence was not realized in any instance, and only for an hour's duration in one case, but a simple spring contrivance can be worn on the penis which ensures continence at will. Pyelonephritis developed later in only one case.

111. **Dislocation of Cervical Vertebrae.**—Meyer reviews the cases on record and reports a new one. The partial paralysis in his case subsided when the luxation was reduced. This was accomplished by very gradual and cautious suspension with traction under scopolamin-morphin-ether general anesthesia. The Roentgen ray showed that the fourth cervical vertebra had been forced forward by ½ cm.

113. **Mobilization of Ankylosed Joints.**—Payr's report of the technic and outcome in this class of cases fills 124 pages and is profusely illustrated. The prognosis is growing constantly better when the stiff joint is mobilized and a flap of soft parts is interposed to serve as a buffer. Satisfactory results can now be confidently predicted for the knee in 70 or 80 per cent. of the cases, as well as for the shoulder, elbow and hip joints. The roentgenographs show that the new joint adapts itself to its functioning in a most satisfactory manner in the majority of cases. The causes of the failure in the unbenefited cases are analyzed in detail, and the lessons to be drawn from them are emphasized.

116. **Open Suture of the Patella.**—Sandrock has recently reexamined 84 of the 106 cases of fractured patella treated by suture at the Leipzig surgical clinic. None became infected by the operation and all the patients recovered, even those whose injured knee had been soiled with street dirt. The functional outcome was found surprisingly good.

118. **Operative Treatment of Pulmonary Tuberculosis.**—Wilms gives an illustrated description of what he calls his *Pfeiler-Resektion* of ribs at the back to permit the thorax wall to sink in and thus compress and immobilize the lung below. He also describes a number of cases in which he immobilized the lung by a filling of paraffin and others in which he combined this with resection of ribs. He cuts a segment of each rib in the back, cutting a strip out from the first to the eleventh rib, working through a vertical incision at the edge of the scapula, the incision carried slanting outward toward the bottom. He resects from 8 to 10 cm. in the upper ribs and from 12 to 15 in the lower ones. The stumps are forced almost together by the elasticity of the wall. By crushing the intercostal soft parts with a clamp, their sensibility is deadened so there is no pain to speak of afterward as the wounds heal. Of the 23 patients he treated by this pillar resection in 1911 and 1912, 4 are clinically cured; 9 materially improved and nearly cured, and 4 are merely improved. None succumbed to the operation. Four died including 2 who were operated on only as a last resort, one patient having angina pectoris besides his consumption.

Monatsschrift für Kinderheilkunde, Berlin

XIII, No. 2, pp. 69-112

120 Roentgen Treatment not Advisable for Hypertrophy of the Thymus. W. Kaupe.

121 Treatment of Spasmophilia in Infants. Bernheim-Karrer.

122 Concentration of Hydrogen Ions in the Contents of the Infant's Stomach. A. Schackwitz.

123 Changes in Respiration Curve under Electric Tests as Aid in Diagnosis of Latent Tetany. (Atmungskurven bei Kindern mit spasmophilen Symptomen.) M. Masslow.

Medizinische Klinik, Berlin

July 7, X, No. 27, pp. 1127-1170

124 Chronic Bronchitis and Bronchiolitis. Lommel.

125 Sleeping Sickness in German West Africa. (Schlafkrankheit in Kamerun.) P. Kuhn.

126 *Turtle Tubercle Bacilli Cultivated from Mastitis Following Friedmann's Treatment for Tuberculosis. (Specifische Mastitis nach Injektion des Friedmannschen Tuberkulosevaccine.) C. W. Bischoff and K. L. Schmitz. (Befund von Kaltblütertuberkelbacillen in einem Mammaabscess.) W. Fromme.

127 Inhalation Therapy. (Die moderne Inhalationstherapie, ihre wissenschaftliche Ausgestaltung und ihre Auswüchse.) Frentzel-Beyme.

128 Modification of Action of Drugs by Combining Them. (Die Wirkung der Arzneigemische.) M. Kochmann and E. Bürgi.

129 Behavior of Cardiovascular System under Physicotherapy. (Neuere Untersuchungen über das Verhalten von Herz und Gefässsystem unter der Einwirkung physikalischer Heilmethoden.) T. Schott.

130 Complement-Deviation Test of Urine not Reliable for Diagnosis of Tuberculosis of the Kidney. (Sind im Urin bei Nierentuberkulöse tuberkulöse Gifte vorhanden?) M. Hetzer.

126. **Specific Mastitis after Friedmann's Treatment for Tuberculosis.**—Bischoff and Schmitz report the case of a woman of 36 given an intramuscular and later an intravenous injection of Friedmann's remedy. Not long after the intravenous injection she received a blow on both breasts in playing with her children, and in the course of the following weeks suppurating mastitis developed on both sides and what seemed to be the turtle tubercle bacillus was cultivated from the pus in pure cultures.

Fromme reports the bacteriologic findings in the case. Bacilli resembling in every respect, he states, the Friedmann strain of turtle bacilli were cultivated repeatedly from the pus of the mammary abscess. The latest cultures of the bacilli were made 104 days after the injection, demonstrating that the bacilli had retained their vitality in the body for this length of time. The mammary process proved essentially chronic in its course.

Münchener medizinische Wochenschrift, Berlin

June 30, LXI, No. 26, pp. 1433-1488

131 *Advantages of Caramel in Diet of Diabetics. (Karamelkuren bei Diabetikern.) E. Grafe.
132 *Action of Sodium Bicarbonate on Pancreas Secretion. E. Wilbrand.
133 *Vaccine Therapy in Furunculosis. T. Messerschmidt.
134 Possibility of Transmission of Disease Germs on Surface of Bread. (Verschleppungsmöglichkeit pathogener Darmbakterien durch Brot.) Fürst.
135 *Severed Hand Heals in Place with Good Functioning. Schloessmann.
136 Satisfactory Outcome of Tying Off the Pylorus with 2 cm. Wide Strip of Fascia Lata; Thirteen Cases. (Dauerresultate der Pylorusausschaltung.) J. Galpern.
137 Gonorrheal Keratitis after Reinjection of Gonococcus Vaccine. (Konjunktivitis metastatica gonorrhoica.) J. Strebel.
138 *Spinal-Cord Tumor. (Rückenmarksgeschwulst.) T. Mauss.
139 *The German League for Medical Freedom. (Kurpfuscher als ärztliche Sachverständige vor Gericht.) O. Neustätter. Commenced in No. 25.

131. **Caramel Sugar for Diabetics.**—Grafe states that grape sugar caramelized at a temperature of 140 to 150 C. has proved a useful means to supply carbohydrates to diabetics without increasing the glycosuria. He tested its action on animals through two years of experiences, and then gave it to twenty-five diabetics and found that it usually had a decidedly favorable action on the acidosis. The daily dose was from 150 to 200 gm., his extreme range 100 to 300 gm. This was fractioned throughout the day and taken in brandy or coffee or in puddings. He generally gave it for two to four days at a time, repeating as necessary after interposed "vegetable days." By this means it is possible to supply 600 to 800 calories from carbohydrates, and in fluid form. Any tendency to diarrhea can be combated with astringents. Grape-sugar caramel seems to be borne better than cane-sugar caramel. It should contain only 3 or 5 per cent. sugar or less. There do not seem to be any contra-indications except coma and enteritis. The respiratory quotient shows marked increase in oxidation processes under its influence. Diabetics seem to assimilate best hard-baked crust, caramelized starch, etc.

132. **Effect of Sodium Bicarbonate on the Pancreas.**—Wilbrand found in tests on dogs with a duodenal fistula that sodium bicarbonate materially reduced the secretion in the pancreas. It can thus prove useful in sparing the pancreas when conditions require this.

133. **Vaccine Therapy and Furunculosis.**—Messerschmidt applied autogenous vaccine in 16 cases of chronic furunculosis and in 14 of the patients no further furuncles developed. The cure has persisted to date for two years in one case, although there are still occasional pimples. The 2 refractory patients were a weakly infant and a man with severe acne, both with the *Staphylococcus albus*, but probably this was not the primary causal germ.

135. **Restoration of Function after Replacing of Severed Hand.**—The boy's right hand had been cut off in a feed-chopper and hung by a strip of soft parts only 3 cm. wide. Fortunately the artery, ulnar nerve and four tendons were intact in this bridge, and as the hand was clapped back into place at once there was no infection. Except for a slightly livid appearance of the thumb and forefinger the hand looks and works now, over a year later, entirely normal; even the sensory functioning is perfect and the handwriting shows little change. Only when severe exertion is required is any difference noted. An interval of six hours had elapsed before the operation; it included suturing the periosteum, the joint ligaments, median nerve and twenty-two tendons.

138. **Spinal-Cord Tumor.**—Mauss' case is remarkable only in the complete recovery of the long bed-ridden woman of 50 after removal of a subdural psammoma as large as a bean, compressing the spinal cord between the eleventh and twelfth dorsal vertebrae. The first symptoms were noticed two years before and were treated as sciatica. The paralysis progressed with intense pains and sensation as if the legs were packed in ice. Three months after the operation the patient was on her feet and now, after two years, she can walk for an hour without fatigue.

139. **The German League for Medical Freedom.**—There is an organization in Germany, the *Zentralverband für Parität der Heilmethoden*, which unites under its banner all who are antagonistic to scientific, legally qualified medicine. It thus includes all types of those who prey on the credulity of the sick and by its ceaseless, wily propaganda it has enlisted many of the thoughtless. The criminal records of a number of those prominent in the league are reviewed here by Neustätter. He tabulates 32 who have a history of fine or imprisonment for a total of four deaths under their practices and thirty-one severe personal injuries; 6 who have several such counts to their credit, and about 20 who have paid similar penalties once or more for direct swindling or penitentiary offences. He tabulates only those cases of which he has verified data, and cites the amount of the fine and the penitentiary or jail sentence in each. The league has fifty-nine members of parliament enrolled in its membership.

Therapeutische Monatshefte, Berlin

July, XXVIII, No. 7, pp. 469-548

140 *Lumbar Puncture as a Therapeutic Measure. H. Quincke.
141 *Dietetics and Pediatrics. L. Langstein.
142 Prophylaxis and Treatment of the Heart Weakness in Pneumonia. H. L. Elsner (Syracuse, N. Y.).
143 Quinin in Treatment of Syphilis. M. J. Breitmann.

140. **Lumbar Puncture as Therapeutic Measure.**—Quincke here discusses what can be hoped from lumbar puncture as a palliative or curative measure in various affections. Besides removing toxins and debris in the fluid thus withdrawn it may transform conditions in the serosa until spontaneous return to normal is possible, by removing the obstacle to the flow of blood and lymph and functioning of muscles. He warns that the patient should lie flat in bed for at least twenty-four hours afterward, abstaining from alcohol and only gradually returning to other positions. He takes up in turn in his ten pages each affection in which it could have a possible application, summarizing the leading principles in the statement that it should be applied or at least given a trial in all cases in which there is even suspicion that pressure from the cerebrospinal fluid is the cause of threatening symptoms or even of headache, stupor or vomiting. In acute cases of simple serous transudation, with or without inflammation, a single lumbar puncture may transform the clinical picture completely to a permanent cure. If the benefit is only transient, the puncture may have to be repeated daily or even oftener at first and then at longer intervals of three to ten days, and be kept up possibly for months. In this protracted course the indications should be reviewed anew each time, studying the course of the case, and the effects of each separate preceding puncture.

Always in applying lumbar puncture, he emphasizes, the pressure at the start and close and the amount withdrawn should be recorded each time. Systematically repeated lumbar puncture often permits a favorable outcome in suppurative bacillary cerebrospinal meningitis, and even in rare isolated cases of the tuberculous type. Quincke does not agree with those who denounce lumbar puncture if there is suspicion of a brain tumor. He advocates it in many cases as liable to improve the symptoms materially for a long time, even to the complete subsidence of choked disk.

141. **Dietetics for Children.**—Langstein reviews recent work showing the unceasing activity in the study of dietetics for sick and well infants and older children and the fine results already accomplished. Much that has already been learned might advantageously be applied to the diet of adults. Psychic influences affecting the course of digestion must be considered the more the older the child.

Wiener klinische Wochenschrift, Vienna

June 25, XXVII, No. 26, pp. 925-968

144 Filtrable Viruses. (Neuere Ergebnisse in der Erforschung des filtrierbaren Virus.) R. Kraus.
145 Improved Technic for Serodiagnosis of Cancer. (Blutserumuntersuchungen bei Karzinomatösen mit neuer, verbesserter Methode.) G. Kelling.
146 Source of Antibody in Syphilitic Cerebrospinal Fluid. (Herkunft des luetischen Reaktionskörpers.) W. Spät.

147 *Roentgen-Ray Cancers. H. Bichler.
148 No Menstrual Enlargement of the Thyroid. (Zur Frage der menstruellen Schilddrüsenvergrösserung.) N. Woronytsch.

July 2, No. 27, pp. 969-1012

149 *Testicle Functioning in Dogs Not Impaired by Ligation or Resection of Vas Deferens. (Auffällige Befunde bei experimentellen Studien an Nebenhoden.) J. Kyrle and K. J. Schopper.
150 Toxic Action of Fat Fed to Laboratory Animals. (Fettintoxikation.) O. Weltmann.
151 Technic for Injection of Paraffin to Make Artificial Tumor in Pineal Gland Region. (Künstliche Tumoren der Zirbeldrüsengegend.) J. Novak.
152 Hydrops of the Bile Apparatus: Four Cases. ("Weisse Galle.") R. Steiner.
153 Operative Restoration to Normal Site of Congenitally Displaced Kidney; Two Cases. (Verlagerung der kongenitalen dystopen Niere.) Korencan.
154 Cholesterin Content of the Serum in Dermatology. F. Fischl.
155 *The Public-Health Service in Egypt. (Das Sanitätswesen in Aegypten.)* E. Weiner.

147. **Roentgen-Ray Cancers.**—The four cases reported all date from the early days of Roentgen work at Vienna. Three were in persons handling the rays professionally and in two of these a predisposition may have been afforded by syphilis; one developed general paresis along with the malignant degeneration of the Roentgen burn. The interval between the first signs of trouble and the development of the cancer was eight, fourteen, fifteen and eighteen years and amputation of the hand or arm saved the lives of the professionals. In the other case a boy of 9 was treated with Roentgen exposures on account of rebellious prurigo and eczema. The treatment was successful but the scalp was left almost entirely bald, and a year later a severe, intensely itching dermatitis developed here and on the back which resisted eighteen months of treatment but gradually most of the area healed over. Five years later the area on the front of the head which had never entirely healed over became painful and the tissues proliferated to form a small tumor which bled readily. It was easily excised and the microscope confirmed the malignant nature of the tumor. The patient has been free from disturbances during the two years since to date. Malignant degeneration of a Roentgen-ray burn is usually accompanied by much pain; nearly all writers on Roentgen cancers mention the intensely painful nature of the process.

149. **Ligation or Resection of Epididymis in Dogs.**—Kyrle and Schopper state that they found it impossible to induce atrophy of the testicle by ligation, resection or other injury of the epipidymis or ligation of the vas deferens. The testicle on that side was found gorged with sperma four or six months afterward. In one of the dogs spermatozoa were found in the arteries and veins in the region. Their arrangement in the blood-vessels seemed to indicate that they had made their way into the blood.

Zentralblatt für Chirurgie, Leipsic

July 4, XLI, No. 27, pp. 1145-1176

156 Improved Technic for Harelip Operations. (Heftpflasterverband bei Hasenschartenoperationen.) Hofelder and A. Narath.
157 *Technic for Pyelography. E. Joseph.

157. **Technic for Pyelography.**—Joseph remarks that those clinicians with the most extensive experience with pyelography have been spared the mishaps occasionally reported by others. He thinks this can be explained only by better technic, and describes a number of minor technical points which he has found useful in his own service, such as the use of a fine catheter, not over No. 6, so that any excess of fluid injected runs back freely outside of the catheter. Sometimes the catheter can be introduced without effort far beyond the distance between bladder and kidney, the flexible tip rolling up in an abnormally wide ureter or pelvis; in this case roentgenoscopy at once, without injecting any opaque fluid, may give all the information desired. When the ureter catheter is in place and the urine is dripping from it, he withdraws the cystoscope and fastens the end of the catheter to the thigh with a strip of plaster. Abdominal breathing is shut off by tightening a girdle and all is made ready for the Roentgen exposure. Then the freshly made, 10 per cent. collargol solution is slowly injected, stopping when the patient feels the slightest sensation of fulness or pain under the costal arch. Unless he can rely on the patient's intelligence he does not inject more than 3 or 4 c.c., but as a rule he injects twice this and sometimes up to 14 or 20 c.c. The moment the injection is completed the instantaneous exposures are made and then immediately the catheter is withdrawn and the patient is made to stand up so the fluid runs down into the bladder. By this technic it has not remained more than a minute in the kidney pelvis, and the patients could return home at once. He refrains from pyelography on principle unless the fine catheter slips readily in. If the mere introduction of the catheter causes pain or bleeding, he gives up the attempt at pyelography at once.

Zentralblatt für Gynäkologie, Leipsic

July 5, XXXVIII, No. 27, pp. 961-984

158 *Radium Treatment of Uterine Cancer. (Radiumbehandlung bei Gebärmutterkrebs.) E. Schauta.
159 *Palpation of Fetal Head from the Rear. (Der diagnostische Hinterdammgriff.) E. Schwarzenbach.

158. **Radium Treatment of Uterine Cancer.**—Schauta remarks that it is certainly noteworthy that half of his twenty-two patients treated with radium are clinically cured to date. In all the uterine growth was in an inoperable stage. He operates in all operable cases, but insists on a course of radium treatment afterward, small doses with brief exposures at long intervals to ward off recurrence.

159. **Locating Fetal Head from the Rear.**—When the fetal head has passed the pelvic inlet, it can be felt from the rear, pushing the finger tips in deep between the coccyx and the anus. The parturient lies on her side and between labor pains the finger tips are worked in slowly and finally are pushed up with a quick, brief push. Unless the head can be felt when this is done, no attempt at forceps extraction should be made.

Gazzetta degli Ospedali e delle Cliniche, Milan

XXXV, Nos. 76-77, pp. 801-824

160 The Cystoscope for Examination of Pleural Cavity, etc. (Diagnosi delle malattie polmonari per la pleuroscopia-toracoscopia.) E. Stolkind.
161 The Wassermann Reaction Is of Only Relative Import. A. Pasini.

Policlinico, Rome

XXI, Nos. 25-26, pp. 889-960

162 Diphtheria Antitoxin in Puerperal Fever, etc. (Alcune speciali applicazioni del siero antidifterico.) R. Carnelli.
163 Bile Favorable Culture Medium for Malta Fever Germs. (Ricerche sperimentali sulla latenza del micrococco di Bruce nella bile.) F. Tallo.

June, Medical Section No. 6, pp. 245-292

164 Tumor in Right Frontal Lobe Causing Cerebellar Syndrome. O. Fragnito.
165 Basic Staining of Red Corpuscles. (Osservazioni sperimentali e considerazioni cliniche sulla basofilia dei globuli rossi.) E. Bianchi.
166 *Léri's Arm Sign in Brain Disease of Central Nervous System. (Il "segno dell 'avambraccio" nelle malattie mentali.) G. Vidoni.

June, Surgical Section No. 6, pp. 257-308

167 Tumor in Round Ligament Protruding through Inguinal Canal. G. Beccherle.
168 Fascia Flap to Bridge Gap in Tendon in Hand. (Il mio metodo di plastica tendinea in 2 casi di gravi lesioni traumatiche.) L. Fioravanti.
169 Hematuria from Varices in Bladder. G. Dialti. Commenced in No. 5.

166. **Arm Sign in Disease of Central Nervous System.**—Léri recently called attention to the long-course reflex elicited in the forearm when the arm, hanging relaxed, is sustained by the investigator's left hand under the wrist while with his right hand he rolls up the fingers and the hand on the forearm. As this is done the forearm bends as if drawn by an elastic cord. This is the physiologic reflex, and it may disappear in case of an organic lesion anywhere along the reflex route.

Vidoni states that he tested 301 patients in an asylum for this reflex, the findings confirming Léri's statements in every particular. He found it impossible to elicit the reflex in any case of organic hemiplegia.

Riforma Medica, Naples

June 27, XXX, No. 26, pp. 701-728

170 *The Liver with Heart Disease. (Sul fegato dei cardiaci.) A. Tomaselli.
171 Achondroplasia. R. Massalongo and C. Piazza. Commenced in No. 25.
172 *Sutured Stab Wound of the Heart. (Ferite del cuore.) J. Bruchi.
173 Echinococcus Disease in Three Young Children. L. Fioravanti.

170. **The Liver with Heart Disease.**—Tomaselli examined repeatedly the condition of the liver in sixty patients with heart disease. In 80 per cent. the condition of the liver was unmistakably connected with the heart trouble; in the others the liver was enlarged, but there was no tendency to edema. A history of malaria or abuse of alcohol was evident in these cases. The prognosis seems to be better when the liver has suddenly grown large than in cases with more gradual enlargement. In any event, enlargement of the liver in the course of heart disease must be regarded as a sign of failing compensation, and one of the gravest.

172. **Suture of Stab Wound of Heart.**—The young man was stabbed in the right thigh and in the right auricle. Bleeding profusely, he sprang on a bicycle and raced to the hospital nearly half a mile distant where the wound was sutured at once, three stitches being taken in the auricle. Salt solution was administered by the subcutaneous drop method before and during the operation and afterward. Complete recovery soon followed.

Archives des Sciences Biologiques, St. Petersburg

XVIII, Nos. 1-2, pp. 1-212. French Edition

174 The Works of V. V. Podvyssotsky. V. N. Klimenko.
175 *The Physiology of Sleep. N. A. Rojansky.
176 The Physiology of the Thyroid. (Le phosphore, l'azote et les lipoides chez les animaux thyroidectomisés.) A. I. Youchtchenko.
177 Lime Sterilization of Drinking Water. (Les résultats qu'a fournis . . . la désinfection de l'eau du Don par une solution de chlorure de chaux.) G. J. Bronowicki and S. K. Dzerszgowski.

175. **The Physiology of Sleep.**—This long communication reporting research on the physiology of sleep was done under Pawlow. The nervous mechanism of sleep, the extinguishing of the conditional reflexes as sleep came on, were studied principally by the relaxation of the muscles in the neck accompanying the first weakening of the conditional reflex. A special rubber-bulb apparatus recorded the moment when the muscles in the dog's neck relaxed—these are the first to relax in dogs and about the last in cats. The conditional reflexes were elicited among other means with food, estimating the intensity of the reflexes by the number of drops of saliva that dripped from a fistula in the salivary glands; sleep coming on inhibits the secretion. The purpose of sleep seems to be to prevent excessive losses of energy. The mechanism for sleep should therefore, and it does, seal up the source for loss of energy as it arrests the functioning of the muscular system, shutting off all communication between the motor system and the external world. A period of sleep in each twenty-four hours conserves energy, but Rojansky insists that it is theoretically impossible to understand why it is such a vital necessity. He remarks that the best evidence of the absolutely vital necessity for sleep is that even in the busiest and most hurried marts of trade, where "time is truly money," yet no one has unlearned the habit of sleeping a certain number of hours in the twenty-four. He cites experiments showing that puppies died when kept without sleep for five or ten days and older dogs eight to twenty days, and Daddi found that the dogs died sooner when they were fed than when no food was given. Rojansky suggests that the fatal outcome may be attributed in part to the measures necessary to keep the dogs from sleeping; they must have been of such a nature that the dogs really suffered from overexcitement and overexertion in addition to the loss of sleep. There is much, he concludes, to sustain the assumption of an inherent periodicity regulating sleep, similar to the periodical fluctuation of the temperature during the twenty-four hours regardless of whether the individual is "turning night into day" or not. There may be a periodical chemical rhythm in the secretion or other functioning of glands with an internal secretion, and the problem of sleep can be best elucidated, probably, by study of all the daily periodical functions of the organism and the relations between them and processes of inhibition. Sixteen pages are devoted to the tabulated "hypnograms" of the nine dogs, and the titles of 446 articles on sleep are listed.

Russky Vrach, St. Petersburg

XIII, No. 12, pp. 397-464. V. Afanassieff Number

178 *Secretory Properties of Tumors. I. Shirokogoroff.
179 Action of Epinephrin on the Liver. E. Mazing.
180 *Organotropic Action of Salvarsan. I. Kaplan.
181 *Abderhalden's Reaction. A. Krupsky.
182 Acute Aleukemic Lymphadenosis. Mazing and Shirokogoroff.
183 Biology of Chondriosomes. V. Rubashkin.
184 Islands of Langerhans in the Pancreas. G. Kull.
185 Primary Fibrosarcoma in Peritoneum. V. Sorokin.
186 Sarcomas of the Eyeball. T. Verkke.
187 Cause of Leprosy. A. Paldrok.
188 Deformity of Spine and Chest; Two Cases. G. Adolphi.
189 Splenomegaly. K. Dehio.
190 Advantages of Two Test-Breakfasts. V. Zimmerman.
191 Enteritis in the New-Born in Connection with General Infection through the Intestines. V. Joukovsky.
192 *Technic for Injection of Salvarsan. E. Terrenson.

178. **Secreting Properties of Tumors.**—Shirokogoroff states that the cells of some new growths seem to possess secretory properties similar to those of the mother tissues. The presence in the cells of cancer of small granules known as Altman's granules, chondriosomes, confirms this opinion. They appear in the form of very small droplets which may attain in some cases the size of the granules of a red blood corpuscle. The process of development and growth of these formations is the same as in a normal gland, and indicates that the cells of a malignant growth containing these chondriosomes have a secretory function.

180-192. **Technic for Salvarsan and Its Affinity for Tissues.**—Kaplan injected an alkaline solution of salvarsan mixed with normal salt solution into twenty rabbits, ten cats and seven dogs, both intravenously and hypodermically. The central nervous system afterward showed hyperemia and hemorrhages, especially in the cerebellum and spinal cord. The cells showed no changes, except a slight chromatolysis in the large pyramidal cells, in cells of Purkinje, the medulla and spinal ganglia. There were also found hyperemia in the kidneys and fatty degeneration of the renal epithelium in dogs. Kaplan comes to the conclusion that salvarsan has an organotropic action with a special affinity for the nervous system.

Terrenson recommends for intramuscular injection acid solutions of salvarsan which he used with excellent results on more than 700 patients. He never used more than 4 c.c. of water, without any alcohol. The injection was made along Duhot's line, extending from the anterior crest of the ilium down to the lower end of the sacrum. The needle is inserted on this line where it is crossed by a line drawn upward along the external third of the femur. The needle must be inserted perpendicularly to the muscle, not deeper than 1 inch. For intravenous injections he uses alkaline salvarsan solutions. The acid solutions are especially indicated in syphilitic lesions of the vessels and heart; he found the salvarsan an excellent and harmless remedy, especially when given in connection with mercury.

181. **Serodiagnosis by Protective Ferments.**—Krupsky studied the value of *Abderhalden's* reaction in pregnancy, in the post-partum period, in different gynecologic affections, in cancer, etc., and comes to the conclusion that identical results can be obtained in extremely varied conditions, as, for instance, in pregnancy and malignant disease, yet in pregnancy the reaction is always positive even in the earliest stages. It may help to diagnosticate pregnancy in its earliest stages, remaining positive even two weeks after delivery. This establishes its medicolegal value in cases for instance, of criminal abortion or passed normal labors, when this reaction may confirm the assumption of a preceding pregnancy.

St. Peterburger medizinische Zeitschrift

XXXIX, Nos. 10-11, pp. 123-145

193 *Treatment of Eclampsia on Basis of Retention of Salt. (Zur Therapie der Eklampsie auf Grund von Beobachtungen der Kochsalzretention.) A. Christiani.
194 Injury of the Vagus during Removal of Tumors in the Neck. F. Weber.
195 Importance of Diverting the Course of the Urine in Resecting the Urethra. Klopfer.

193. **Treatment of Eclampsia on Basis of Retention of Salt.**—Christiani insists on the importance of the retention of salt as an element for the prognosis in eclampsia. In a case reported this, in connection with the other symptoms, compelled immediate cesarean section, saving both mother and child in an extremely severe case of eclampsia. Notwithstanding venesection and infusion the amount of urine fell off to 135 c.c.; the albumin had increased from traces to 12 per thousand, while there was only 0.4 c.c. of salt to the liter. The morning after the operation the albumin had dropped to 2 per thousand while the salt had risen to 2 c.c per liter. In some other typical cases cited the severe symptoms appeared and disappeared parallel to the drop and rise of the salt curve in the urine. His experience has been that retention of salt occurs with the uncontrollable vomiting of pregnancy and even before there are signs of albuminuria. Its importance as a guide to treatment in this case is obvious.

Hospitalstidende, Copenhagen

July 1, XLII, No. 26, pp. 817-840

196 *Benzol in Leukemia. H. C. V. Møller.

196. **Benzol in Leukemia.**—Møller reports three cases, all in women between 39 and 62, developing about the same time and treated at the Faxe public hospital. The leukemia was of the myeloid, lymphatic or pseudoleukemic type. Under benzol treatment improvement became speedily manifest; one patient could not take the capsules and the benzol was given in small oatmeal-gruel enemas. To each patient 1 gm. was given the first day, increasing by 1 gm. a day to a total of 4 gm.; then the daily dose was kept at 3 or 3.5 gm. systematically until the two true leukemia patients in the course of four months had taken 430 or 360 gm. benzol. In the pseudoleukemia patient the blood seemed to undergo a destructive process, proving fatal about a month after suspension of the medication, with dyspnea, and bleeding from the gums. The reds had dropped to 900,000 and the whites to 625. The improvement at first under the benzol had been striking. The myeloid patient seems to be clinically cured to date, eight months since discontinuance of treatment; the lymphatic patient seemed to be also clinically cured but has succumbed since to intercurrent pneumonia.

Hygiea, Stockholm

LXXVI, No. 11, pp. 625-688

197 *Technic for Effectual Treatment of Gonorrhea in Women. (Om gonorrens behandling och botbarhet hos kvinnan.) J. Almkvist.
198 Benzol and Thorium X in Leukemia. S. Berg.

197. **Gonorrhea in the Female.**—Almkvist is convinced that the reason why the usual treatment for gonorrhea in women so often fails to cure is because the antiseptics used in fluid form do not stay long enough in contact with the mucosa—conditions in the female being far less favorable than in the male. To obviate this he applies the disinfectant in the form of a jelly, injecting it under pressure so that the entire mucosa lining is stretched, thus smoothing out the folds and wrinkles and permitting the disinfectant to make its way into the crevices and by its semisolid consistency to cling there. He gives the detailed histories in tabulated form of 20 cases treated in this way and repeatedly reexamined for months afterward, in 8 cases along with the husbands, both being permanently free from gonococci afterward. In 5 cases the course of treatment required only from nine to fourteen days; in 5 others from twenty-one to twenty-six days; in 11, from thirty-five to ninety-eight, the longer course being necessary on account of complications. In one of the certainly permanently cured cases the gonorrhea was of nine months' standing. He never witnessed any untoward by-effects from injecting the medicated jelly into the uterus as a prophylactic measure even when no gonococci could be discovered in the cervix. All the patients but two had urethritis, and all but two had cervicitis. It is important, he reiterates, to cleanse the mucosa perfectly before injecting the jelly. His formula for the latter is 3 parts tragacanth; 2.5 parts alcohol, and 100 parts distilled water, to which he adds 1 per cent. of a silver salt. Fully 20 c.c. of the jelly are necessary in treating gonorrhea in the rectum, but in the cervix and urethra about 3 c.c. is generally sufficient.

Ugeskrift for Læger, Copenhagen

June 4, LXXVI, No. 23, pp. 1041-1084

199 *Overeating as Cause of Sickness. (Overeernæring som Sygdomsaarsag.) E. E. Faber.
200 Familial Tuberculosis. V. Holm.

June 11, No. 24, pp. 1085-1112

201 *Improved Technic for Mercurial Treatment: Inhalation Device. (Emikuren.) C. Engelbreth.

June 18, No. 25, pp. 1113-1142

202 Venous Stasis as Cause of Certain Complications of Operations for Glaucoma. (Om Glaukom. V.) C. F. Heerfordt.
203 Severe Reaction, with Albuminuria, to Dose of Purgen. L. Balslev.

199. **Overeating as Cause of Sickness.**—Faber is convinced that many of the morbid conditions credited to the "uric acid-diathesis" are in reality merely the effects of eating too much either at the time or previously. His list of 283 corpulent and 364 not corpulent patients shows how chronic rheumatism, lumbago, varices and constipation are far more prevalent among the corpulent. The combination of rheumatism and nervous symptoms in the corpulent is especially frequent. Comparison of the mortality of the corpulent shows a much higher mortality from heart and kidney disease and apoplexy. This may signify that the corpulent have less resisting power. But his main argument is the benefit which follows restriction of the diet. Rheumatism, neuralgia, etc., are liable to show prompt and persisting improvement when the diet is restricted so that the weight is reduced. Chronic rheumatism, refractory to heat, baths, massage and drugs may yield promptly and permanently when a few pounds of fat have been thrown off and it may return when the patient over-eats again. He found the blood-pressure unusually high in thirteen of fifteen corpulent patients; it ran up to 220 in two. Restriction of the diet alone may bring a high blood-pressure down to normal as the patient throws off superfluous flesh. The latter is not the cause of the rheumatism, etc., but both are due to overeating.

201. **Engelbreth's Mercury Inhalation Method of Treating Syphilis.**—The initials of this title form the name "emi" given to this method of treatment. Engelbreth claims for it accurate dosage—which is never possible with inunctions—convenience and simplicity of application, and remarkable efficacy, the mercury given in this way displaying its full potency without drawbacks. The mercury is vaporized by the heat of the water kept at 60 C. and the air passing through it is warmed to 50 C. The pure mercury precipitate on cotton is in a cylindrical glass with perforated top and bottom through which passes the air. Weighing the glass cartridge before and after use shows a loss of weight of 45 mg. mercury in thirty minutes, and this is the standard dose. With this technic, he reiterates, there are no dangerous deposits of mercury while the drug is brought directly into the arterial blood. He graduates the dose as a rule by the patients' weight and condition, beginning with a twenty-minute sitting and increasing to thirty, forty or sixty minutes, with constant supervision of pulse and weight. Headache, dizziness or diarrhea show that the dose is too large. One of the advantages of the method is that on stopping the inhalation there is no further absorption, so the medication is at all times under control. The course consists of twenty to thirty sittings. In tabes he gives only half doses. The results of this "emi-treatment" seem to have been unusually good in the 100 cases he reports.

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EXPERIMENTAL AND CLINICAL STUDIES OF COLON STASIS [*]

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The subject of colonic toxemia may be studied under four headings: (*a*) colitis; (*b*) adhesions, membranes and kinks; (*c*) colon dilatations and visceroptosis, and (*d*) stasis. The solution of many vexed questions of alimentary toxemia may with good reason be sought in an understanding of the mutual relationship of these factors.

In examining the region of the terminal ileum, cecum and ascending colon of a large number of dogs, it is observed that this area is almost invariably the site of peri-intestinal inflammation with a notable tendency to the formation of membraniform adhesions. Such membraniform adhesions are very common in apparently healthy dogs. The vermiform appendix in the dog, as is well known, is very large, being virtually an elongation of the cecum. This abnormally large appendix is usually found to be tightly filled; likewise the ascending and transverse colons are more or less engorged at nearly all times in the healthy dog. Manifold membranous adhesions bind the appendix to the terminal ileum or to the ascending colon. In several specimens the appendix was sharply angulated at two or three levels by contracting membranes or bands. Often the terminal ileum was found to be enveloped in such membranous adhesions. On microscopic examination of the colon wall opposite these adhesions, complete evidence of chronic colitis was found in each case. The goblet-cells and the lumina of tubules were engorged with mucus. The intertubular spaces were infiltrated with round cells and the polyblasts of Maximow were seen in nearly every field. The small blood-vessels were congested. Colon stasis in the dog is almost constant. Thus it appears that the factors mentioned before, adhesions, membranes and kinks, colitis and stasis are to be observed in nearly every dog. What is the relation between the adhesions, the stasis and the colitis?

I have produced in rabbits a colon stasis by prolonged intermittent ligation of the anus, and such an artificially induced colon stasis resulted after a few weeks in the formation of plastic adhesions which were drawn out into membrane form by the normal movements of the large intestine. These membraniform adhesions appeared most frequently about the cecum and at the hepatic and splenic angles.

A great many writers, including Virchow, Gerster and Pilcher, have expressed the belief that plastic adhesions may form about the colon as the result of a toxemia having its origin within the lumen of the large intestine. In view of these things it does not seem illogical to say that membranous adhesions about the colon may result from stasis with associated chronic colitis.

Bassler[1] describes a bacterium which he believes is an important factor in the development of pericolonic adhesions and calls it the *Bacillus adhaesioformis.* He examined the adhesions in eleven cases and encountered this bacillus more often than any other. Runeberg and Heyde isolated eleven different bacteria in inflammatory conditions about the vermiform appendix, among them the *B. fusiformis, B. thetoides, B. butyricus, B. parapneumococcus, B. pseudotetanus* and the *Streptococcus anaerobicus.*

It should be noted that the *B. adhaesioformis* of Bassler was not found in the adhesion but in the intestinal lumen opposite the adhesion. Like the bacilli isolated in adhesion formation by Runeberg and Hyde it is an anaerobe. The presence of these anaerobes in the colonic lumen at the site of adhesion may be accounted for by recalling that it is at the site of adhesion that stasis is marked. These saphrophytes or dung-dwellers are present in the stagnant feces, the oxygen of which is gradually consumed by the *B. coli;* thus a medium favorable for the growth of the anaerobes named is established. It can hardly be regarded as proved that any of these bacteria bear a specific relation to adhesion formation. If these anaerobes, however, do bear a direct or indirect causative relation to adhesions and colitis, stasis by the arrest of feces will favor, through the agency of these bacteria, the development of colitis and pericolitis.

Adami[2] remarks that bacteria pass from the intestine to the peritoneal cavity with comparative ease, and when present locally in any number and of low virulence they tend to be destroyed by the inflammation which they set up so that the fully formed adhesions are sterile. Adami, therefore, supports the contention that stasis through the agency of bacteria may produce pericolonic membranes. On the other hand, membranes, bands or folds which in any way fetter or embarrass the movements of the large intestine will tend to cause stasis. Among these bands and folds are many which are of embryonal origin. Many result from traction on adhesions between appendices epiploicae and adjacent intestines (Douglas G. Reid).

It is true that pericolonic adhesions and membranes do not always produce stasis; and here it should be noted that the clinical consequences of pericolonic membrane formation will vary according to the variety and extent of the pericolonic membrane which is present. The white fibrous embryonal fusion membrane passing from the mural serosa to the colon is almost sure to hamper the normal cecal movements, whereas, the gossamer vascular veil, a very common accompaniment of chronic appendicitis and probably the result of changes in the circulation (Hertzler), I have found frequently in young persons, unassociated with constipation in any form or degree. This, however, does not prove that they bear no relation to stasis. Such diaphanous membranes may be present without compression or strangulation of the colon, in which case they have only a potential clinical significance. Often, however, such veils probably cause or aggravate the condition of stasis.

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[*] Read before the Section on Obstetrics, Gynecology and Abdominal Surgery at the Sixty-Fifth Annual Session of the American Medical Association, Atlantic City, N. J., June, 1914.

[1] Bassler, Anthony: Med. Rec., N. Y., 1914, lxxxv, 427.

[2] Adami, J. G.: Brit. Med. Jour., Jan. 24, 1914, p. 177.

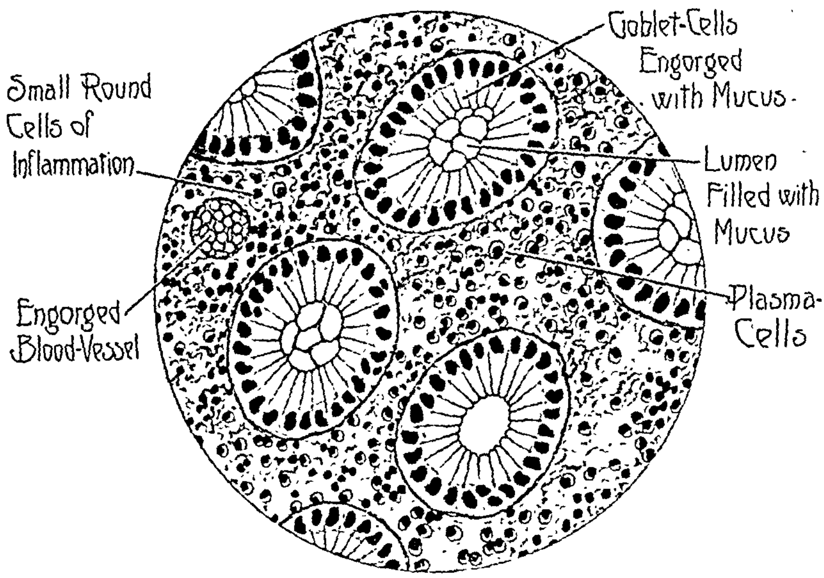
Small Round Cells of Inflammation
Engorged Blood-Vessel
Goblet-Cells Engorged with Mucus
Lumen Filled with Mucus
Plasma-Cells

Fig. 1.—Colitis as seen in association with colon stasis.

I have been greatly surprised at the frequent incidence of this delicate vascular form of pericolonic membrane. It may be found in some form or degree about the cecum in nearly every case of chronic appendicitis with stasis. That is, a thin vascular extra peritoneum may be slipped over the underlying serosa in, I believe, at least 75 per cent. of cases of chronic inflammation of the vermiform appendix. I have demonstrated it in twenty-six consecutive cases of chronic appendicitis with constipation, which observation suggests that the movable vascular veil bears the relation of cause or effect to the chronic appendicitis. The interference with drainage caused by the membrane, doubtless, predisposes to appendicitis.

I have found the appendix when buried under a pericolonic membrane to be greatly reduced in caliber, resembling a very slender cord, white and almost bloodless. Occasionally the first proximal inch of the appendix was of normal size, but the filiform strand beneath the adhesions or membranes was of a cross-diameter of only 2 or 3 mm. It is not proved that this form of membrane is always of fetal origin. It seems more probable that it is a result of irritation or infection, developing either in fetal or adult life; but, however that may be, an appendix thus strangulated could hardly drain normally.

Pericolonic adhesions nearly always give rise to disturbances of one kind or another. The constriction and fixation of the intestine produce not only a mechanical distortion inducing stasis and colitis, but certainly in some cases, by establishing abnormal functional conditions, give rise to aberration in the behavior of the gastro-intestinal tract through the agency of reflex action. Thus in some instances, as Hewes has explained:

> Spasm or abnormality of peristalsis of portions of the gut, stasis of contents or gas, may occur in portions far removed from the actual seat of the lesion without the finding of any anatomical variation in the portion where the function is disturbed. For example, disturbances of the stomach, with imperfect emptying of contents, may occur in cases where no distortion of the stomach or duodenum is present, and where the only abnormality found is adhesions about the cecum and stasis of contents.

Like many others I have occasionally been able to relieve colon stasis permanently by division of an enveloping pericolonic membrane, which fact, though it may not prove that the membrane produced the stasis, is at least strongly suggestive. It seems reasonably fair in view of the foregoing data to say that pericolonic membranous adhesions may induce colon stasis, and on the other hand, as a direct result of colon stasis, bacteria may penetrate by exosmosis the coats of the bowel and develop pericolonic adhesions, an instance of vicious circle.

A somewhat similar interchange of cause and effect is presented in the condition of descensus of the colon. If from any cause, such as decrease of intra-abdominal pressure due to relaxation of the lower abdominal musculature, a ptosis of the transverse colon develops, it is clear that the procession of intestinal contents through the V-shaped transverse colon will be slow. It is equally clear that the retardation of the bowel contents in the sagging transverse colon will tend to maintain or increase the ptosis. Thus, we see how stasis leads to ptosis and ptosis leads to stasis.

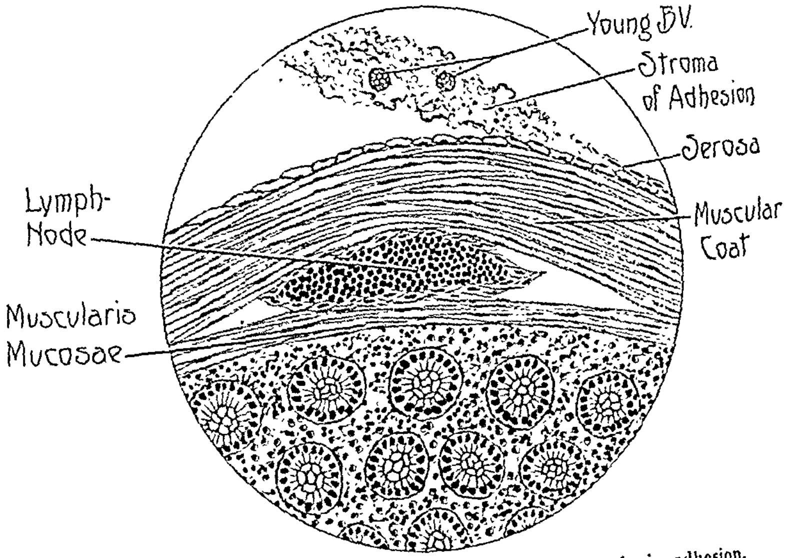

Fig. 2.—Marked colitis as observed opposite pericolonic adhesion.

A specific illustration of downward displacement of the colon, probably acting as a causative agent of stasis, is represented by the cecum mobile of Wilms. The column of contents of the loaded ascending colon by its weight and hydraulic pressure dilates and pushes the cecum downward into the pelvis. The condition of cecum mobile noted results, and as the direct effect of the ptosis and the fatigue of the muscularis of the cecum which empties itself, according to Jackson, like a bulb, stasis becomes more extreme, then comes emigration of bacteria and toxemia by exosmosis, and pericolonic membranous adhesions are formed and another vicious circle is completed.

Colitis seems to be a quite constant accompaniment of stasis and colon ptosis. Sections made by Dr. A. C. Shipp, pathologist of Indiana University, from the human colon wall in cases of chronic stasis in which a short-circuiting operation was performed, disclose, as in the apparently normal dog, chronic colitis evidenced by the presence of plasmatocytes with eccentrically placed nuclei, distended goblet-cells, congested blood-vessels and round-cell infiltration. Colitis may with reason be suspected of causing or increasing stasis. Infiltration of the colon wall decreases its elasticity and contractility and proportionally decreases its propulsive power.

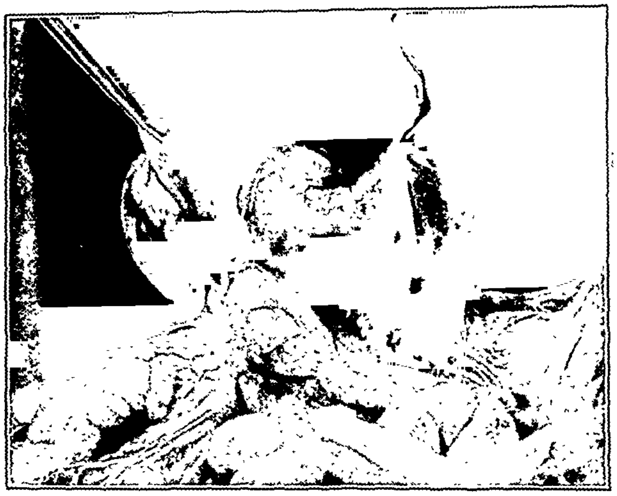

Fig. 3.—Extensive pericolonic adhesions such as are almost constant about caput coli in dogs.

Thus, it appears that each of the elements, stasis, colitis, adhesions or ptosis, may cause any or all of the other three elements or may be caused by any or all of the other three. If this be true, intelligent treatment of any or all of these factors must be based on an understanding of this mutual relationship which takes the form of several correlated vicious circles.

The treatment of colon stasis, by the very nature of its varying causation, must vary according to the peculiarities of each case. Purely medical treatment with petroleum oil, Weir Mitchell feeding after Coffey's plan, which has in view an increasing of the abdominal fat and medical treatment aimed at the arrest of intestinal subinfection, all have an important part in the treatment of intestinal stasis. Hygiene, regular vigorous exercise and proper living will do still more.

As to the surgical treatment of colon stasis, it may be said that this subject is not yet *sprachreif*. Numerous operations have been devised for the correction of the various causative factors concerned in the arrest and stagnation of the intestinal contents. Among the procedures are those of Robert C. Coffey and C. A. L. Reed for the restoration of the ptosed colon to its normal position, and those of Sir Arbuthnot Lane, whose best-known operative exploits are based on Metchnikoff's view that we are better off without a colon.

The surgical procedure to be employed in any given case should be determined not before operation, but after the abdomen has been opened and completely explored. The operation must be made which will most efficiently correct or remove the anatomic or physiologic abnormality which is causing the stasis. In midline ptosis this may mean the hammock operation of Coffey or his operation to increase the capacity of the upper abdomen. In the case of discrete simple band or membrane formation it may mean nothing more than the division or removal of the band or membrane. In the case of a colon so fettered and constricted by pericolonic membranes that it cannot be freed by division or removal of the membrane, or in a colon so hopelessly ptosed that suspension operations cannot be efficient, then colectomy or a short-circuiting operation or both combined are to be considered.

Little or nothing is to be expected from operations for the removal of pericolonic membranes which are at all extensive. I have attempted this many times and my results do not justify continuance of the practice. If one can definitely divide or remove a constricting band or membrane and cover the raw surface which is left, as can be done occasionally, then the operation is justified. Otherwise, it is to no purpose. The leaving of large, denuded areas is sure to be followed by unfavorable results.

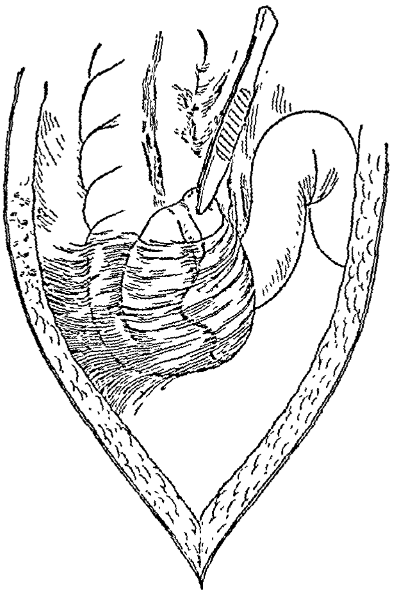

Fig. 4.—Filiform appendix buried under Treves' fold.

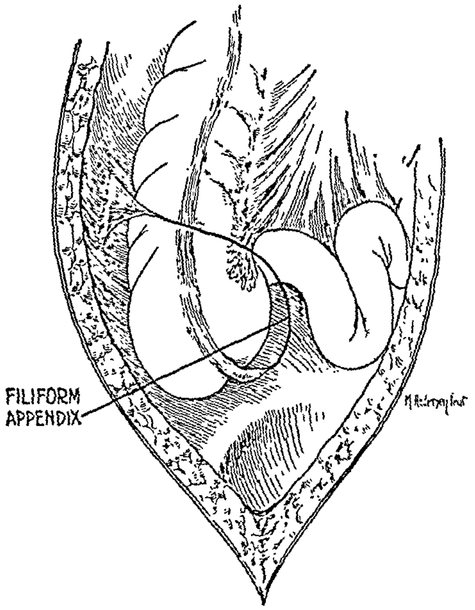

Fig. 5.—Vermiform appendix drawn out into a fine strand, adherent tip drawing out a small membrane from mural peritoneum.

If short-circuiting is to be done, great care should be exercised in selecting the colon surface to be anastomosed.

Mr. Lane places the ileum or cecum against a convenient segment of the sigmoid and the two structures are united, thus throwing 4 or 5 feet of the offending colon out of commission. This method, although easy of execution, is followed in a considerable percentage of cases by fecal regurgitation and impaction.

Case has shown by numerous Roentgen examinations of patients on whom ileocolostomies had been done that the terminal ileum had become a veritable cecum, often dilated and impacted.

Hamilton Drummond made roentgenograms of patients after ileocolostomy and found a definite dilatation of the terminal ileum. The loop of ileum between the anastomosis and the cecum seemed to have taken over to some extent the function of the colon.

Anastomosis of the caput coli at its lowest level with the rectum presents all of the advantages and eliminates some of the evils of ileocolostomy. Ileosigmoidostomy does not efficiently drain the cecum. It has been shown by Mr. Lane in cases in which colectomy had been performed after an ileocolostomy, that the cecum was tightly impacted.

If the caput coli be anastomosed freely to the rectum at the lowest point possible without traction, then the reversed peristalsis of the ascending colon should favor drainage of the cecum through the artificial opening in the floor of the pouch, which is the chief habitat of ammoniacal food and intestinal bacteria of decomposition, and which even in starvation is not entirely empty (Cannon).

The opening of communication should be amply large. In order that the anastomosis may be made on the most dependent surface of the caput coli, the appendix, though normal, if in the way of anastomosis or good drainage, should be removed. If the sigmoid is dilated and very redundant it should be resected in order that coils of incompetent sigmoid may not remain above the stoma.

It is probable that the Roentgen examination of patients on whom short-circuiting operations have been made will continue to afford surprises. My own experience with such examinations has been both interesting and instructive. It has been the rule that patients operated on after the technic described above have experienced prompt relief, even in cases in which the colon impaction had caused distress for years. In a few cases the bowels began moving daily without stimulation of any kind.

When the serial roentgenograms were made after such an operation for stasis without extensive adhesions in which complete relief had been secured, and while the patient was still in the hospital, I found that the bismuth column did not pass from the cecum through the anastomosis opening as I had hoped it would. The first roentgenogram, made twelve hours after the bismuth meal was taken, showed the cecum filled with bismuth, and subsequent examinations showed the bismuth column rising to the hepatic flexure. Serial pictures made up to twenty-four hours revealed bismuth in the transverse and ascending colons. These pictures were made two weeks after operation, when perhaps the margins of the anastomosis opening were still somewhat indurated and unyielding. A week later, or three weeks after operation, roentgenograms showed that the bismuth column after reaching the cecum passed partly through the anastomosis opening, though the greater part arose in the ascending colon as before. In cases with more extensive adhesion formation and with lifeless colon muscularis, the proportion of colon contents passing through the stoma was greater. The Roentgen examination of such cases has shown how little we know of the hydrostatics of the colon. It seems clear that gravity plays little or no part in the course taken by the colon contents, intra-abdominal pressure having a much more important rôle.

The improvement following short-circuiting operations is probably due in some measure to the relief of colitis with consequent relief of the associated factors mentioned previously. Direct drainage by allowing escape of bacteria-laden secretions leads to improvement in the colitis with consequent increase of propulsive power and proportionate decrease of stasis. This is a probability in stasis cases in which the colon is not completely fettered by firm adhesions. Unless the colon is thus hopelessly enveloped in dense membranes, the purpose of a well-planned short-circuiting operation should be, not to put the colon out of commission, but by relief of colitis and pericolitis *through drainage to put the colon back in commission.*

331 North Delaware Street.

THE CONDITION OF A FEW PATIENTS, TWO YEARS AFTER ILEOSIGMOIDOSTOMY *

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The profession in its attitude toward the treatment of ptosis of the stomach and colon may be divided into three classes: (1) those who think that any benefit to be derived from operative procedures depends on the shock given the nervous system by the operation, together with the suggestion of benefit received; (2) those who believe in trying to restore the viscera as nearly as possible to their normal position by various methods, and (3) those who believe in overcoming the effects of displacement by short-circuiting the intestinal tract.

I have been inclined to believe that all three views are correct, and that the difference among them is largely a matter of degree of disability of cases observed. The mildest cases can be much improved by diet, proper rest, exercise and suggestion and almost any operation followed by a few weeks of rest will seem to benefit the patients. Cases of the next class are more severe, and cannot be relieved without some operation that assists the bowel in emptying itself. These various operations for restoring the bowel more or less completely to its normal position answers the purpose for this class. In the third class the large intestine has become so elongated and attenuated that to fasten it up in two or three places increases the number of kinks and does not sufficiently overcome the difficulty of evacuation to enable the bowel to regain its tone.

In support of this view I may say that often the Roentgen ray shows marked displacement of the colon while yet there exists no particular disturbance of its functions. It is my rule when opening the abdomen for any cause to note the location and condition of the colon, just as I examine the gall-bladder and appendix. In many cases I have observed a well-marked displacement, and the history of the case indicated that stasis had existed for considerable length of time, but in the vast majority of cases the patient has improved in this regard after the operation, which was in no way directed to the relief of symptoms on the part of the colon.

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* Read before the Section on Obstetrics, Gynecology and Abdominal Surgery at the Sixty-Fifth Annual Session of the American Medical Association, Atlantic City, N. J., June, 1914.

As most of these patients are admittedly neurotic, the results of any given procedure can be estimated at their true value only after a lapse of some time. The following cases of ileosigmoidostomy are reported to show the results after two years, which I think is a length of time sufficient to give some idea of the permanency of any relief that has been obtained. The cases are too few to be of much value in and of themselves, but if a hundred other operators will likewise report their cases the statistics will be of real value.

Case 1.—Operation was performed at the Good Samaritan Hospital, Jan. 15, 1912. I reproduce a previous report[1]: The first patient I saw with my friend and colleague, Dr. Carothers. She was 31 and unmarried. Up to the age of 20 her health was comparatively good, with the exception of painful menstruation, for which she was twice curetted without relief. At the age of 28 the abdomen was opened and the left ovary and appendix removed. After this the patient's health was only fair; she had headaches and ill-defined pains continuously, for which she consulted internists, orthopedists, oculists and rhinologists. When I saw her she was absolutely unable to work and manifested in a marked degree all the symptoms of colonic stasis. She was afraid to eat on account of the difficulty experienced in evacuating the bowels. Before the operation this patient had not had a stool without the use of strong purgatives for over five years. On the third day following the operation the bowels moved of their own accord and continued to do so up to the present time. For the first week the stools were rather too frequent and loose and irritated the skin around the anus. Since that time the condition of the bowel has been quite satisfactory.

The patient has gained 15 pounds and has been following her work as a hair-dresser and solicitor. Her skin has cleared and her general health improved in every way, and is much better than she had ever been previous. She occasionally is slightly constipated, but an enema is all that is necessary to relieve her.

Case 2.—Miss S. came to me on account of "stomach trouble." She had constant pain in the abdomen and was absolutely unable to work. I could scarcely get her to take enough food to nourish her on account of the distress it gave her. Her bowels moved only with violent purgation. After a month's observation and treatment I advised operation and she immediately consented. The operation was performed and her bowels moved on the third day without any assistance and were rather too loose. Within a week she was eating better than she had for years. Once since she went home she has been slightly constipated, but this was from drinking large quantities of milk.

This patient was in my office within the last month. She came, however, to ask my advice as to the diet for her baby. Six months after the operation she married and in due time delivered a healthy child at full term without any trouble. She nursed her baby with satisfaction to the child and without interfering with her own nutrition. She can now eat anything she wants and calls herself a well woman.

Case 3.—In the case of Miss G., aged 35, menstruation began at the age of 13, and was irregular the first year, later becoming regular and painful. She had suffered from constipation as long as she could remember. She complained of ill-defined pains over the abdomen. She had periods of most profound melancholia and fits of uncontrollable temper. She had worked as a dress-maker but was forced to give up on account of her health. She was treated by a general practitioner of ability, but he diagnosed her case as hysteria and treated her without sympathy and without benefit. Her mental condition was getting worse. I saw her in consultation. Physical examination showed the uterus not well developed, with a long narrow cervix, sharply anteflexed. A fibroid the size of a hickory-nut was present in the anterior wall of the uterus. I advised a thorough dilatation of the cervix, curettage and packing of the uterus, followed by several weeks of rest in bed in a hospital. The large doses of purgatives necessary to move the bowels exhausted her. After two weeks in the hospital I saw that I could not improve her condition any further by rest and changed surroundings. She was sent home and ordered to walk several squares every day, eat large quantities of fruit before breakfast, and take cold sponge-baths. Several times a day she was to exercise by bending forward till her finger-tips touched the floor and then straightening up. Under this regimen she about held her own, but made no further progress. It took 10 grains of compound extract of colocynth with 5 of cascara to move her bowels. Dr. Dudley Webb made roentgenograms of the stomach and intestines, showing ptosis of the colon and slow motility. She returned to the hospital, and on May 22 I did an ileosigmoidostomy and also removed the small fibroid. The bowels moved on the third day without a purge.

The patient was in my office last week; she is the picture of health, with skin clear, eyes bright and a constant smile on her face. She has gained 65 pounds. She has been clerking in a jewelry store and has not missed a day of work since January 1. Only once this year has she found it necessary to take an enema.

Case 4.—Mrs. G., aged 38, German, was exceedingly nervous and unable to work, with ill-defined pains over body and discolored skin. Patient was always constipated, giving a history of taking large quantities of Epsom salts before being able to obtain even a slight bowel movement.

Six months after ileosigmoidostomy she reported as being greatly benefited. A letter received within the last week says that she has not gained much in weight and that occasionally she has to take a purgative. There is evidently considerable improvement in this case, as the patient is able to do all her housework, including the washing for a large family, which was entirely out of the question before operation.

Case 5.—Mr. C. had been a neurasthenic all his life. Constipation in this case was also so severe that it took large doses of purgatives to move the bowels. He suffered greatly from headaches, which completely prostrated him. He had no appetite; there was a marked discoloration of the skin, due to intestinal absorption. The Roentgen ray showed the colon in fairly good position but a greatly elongated sigmoid. Ileosigmoidostomy was done at Bethesda Hospital, the ileum being attached as low as possible.

The patient's body-weight remains practically the same. His bowels move without any trouble, but occasionally he has to take a purge. His headaches are less frequent and less severe. His color is greatly improved and his nervous symptoms decidedly better. I received this report from his family physician this past week.

Case 6.—Miss R., a neurasthenic of the worst type, was operated on at Bethesda Hospital, Nov. 2, 1911. The uterus was curetted and the right ovary, which was cystic, removed. At this time I noted that the colon was elongated and prolapsed. After the operation she did not improve as I expected her to do, so I advised the ileosigmoidostomy. The following July (1912) during my absence from the city Dr. Carothers performed this operation. She immediately improved and her family physician, Dr. Cadwallader, reported to me this last week that the improvement has been lasting.

It would seem that the results are most satisfactory in the patients who live in the city where I could see them occasionally and give them advice as to diet, etc.

These are all of the cases that I have been able to follow for a full two years or more. The cases are too few to justify drawing any definite conclusion, yet straws show the way the wind blows and I shall continue to perform the operation in carefully selected cases. I have carefully avoided trying to swell my list of cases by doing the operation when it was not absolutely necessary. I would not advise the operation in any case until the ptosis has been demonstrated to exist and the Roentgen ray and bismuth have shown as well that there is a marked retardation of the fecal current; and then it is wise to have a good internist see how much improvement he can secure by diet, exercise, etc. When all other methods have failed, however, I believe this operation has a distinct place in surgery.

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[1] Bonifield, C. L.: Ileosigmoidostomy for Colonic Stasis, Am. Jour. Obst., February, 1913.

In many cases this advanced condition has been warded off by proper treatment while the patient is still young. Other patients, while they may not be cured, can be greatly benefited by exercise, diet and improvement of the general health and particularly the nervous system. So it can be seen that I believe that the cases in which this operation is indicated are comparatively few. I hope in the future a better understanding of the etiology of the condition will enable the family physician to make the cases still fewer. In the meantime, however, I think we can by the judicious use of this operation restore some people to their proper useful sphere in the world.

409 Broadway.

RESECTION OF THE FIRST PORTION OF THE LARGE INTESTINE AND THE RESULTING EFFECT ON ITS FUNCTION *

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ROCHESTER, MINN.

Human beings vary in their internal anatomy in about the same degree that they vary in their external form and configuration. Were a man who was thin and 6 feet high to ask us to make him fat and 5 feet 6 inches high by operating on him, we would think him mentally deranged. Yet how frequently in the past have we attempted to correct surgically the internal anatomy because of variations from the average normal, especially the position of the abdominal viscera.

It is less than ten years since nephrorrhaphy, ventrofixation, gastrorrhaphy and kindred operations were resorted to on indications which would not be accepted to-day. We have come to appreciate the fact that comparatively few of the abdominal viscera have unchangeable anatomic characteristics and that variations within limits are not to be considered abnormal.

The large intestine, with its short heredity and changing function, has no such fixed characteristics as have the more primitive small intestines. Arising on the left side of the body, the head of the colon swings to the right but does not reach its normal habitation until after birth. The peritoneal cavity has then already been formed and its attachments on the right side may take on the character of adhesions, in many instances causing that condition which Jackson[1] has so aptly termed a "veil." This looseness of attachment of the ascending colon and hepatic flexure permits of freer movement of the right kidney. The terminal ileum normally comes up out of the pelvis and enters the cecum at an acute angle. The ileocecal valve is a sphincter mechanism acting to hold the ileal contents and delay their progress, and this stasis within limits is normal. Early in fetal life the ileum becomes attached to the inner side of the cecum. This fixation prevents expansion on the inner side and, because of its inability to expand in all directions, the cecum assumes a lopsided appearance. An exaggeration of the sustaining bands is often called ileal kinks.

The large intestine, within normal limits, varies in length and position, especially the transverse colon and sigmoid. The high fixation of the splenic flexure of the colon, economically taking the place of a muscular sphincter, is a fixed characteristic and performs an important function. It holds within the proximal half of the large intestine the ingesta which have been passed into it from the small intestine and delays their progress that fluids and nutritive material may be absorbed therefrom. When the waste remnants move beyond the splenic angle they pass rapidly through the descending colon, which acts as the vestibule to the sigmoid, the normal fecal container. As pointed out by Rokitansky[2] more than sixty years ago, the descending colon is normally empty.

Usually when we speak of the cecum we mean the cecocolon or head of the colon which includes the cecum, ascending colon and hepatic flexure. The cecum itself is the end-pouch only and is but from 1½ to 3 inches in length.

It is altogether probable that in the past too much importance has been attributed to purely incidental changes in the position and attachments of the large intestine. Bands, kinks and adhesions of a normal character have been given a fictitious rôle in the supposed production of symptoms which were not in themselves mechanical. Adhesions, bands and kinks are not usually congenital in the sense that they are formed prenatally and then remain as formed, but they change in character throughout life. The interesting work of Lane,[3] Pilcher,[4] Gerster,[5] Gray,[6] Pringle,[7] Binnie,[8] Jackson,[1] Eastman,[9] Flint[10] and many others has thrown much light on the origin of these bands. We are indebted to the pioneer work of Lane for calling our attention to the fact that in the large intestine may lie the cause of much human misery. While I do not agree with Lane in the great stress which he lays on the rôle of bands, kinks, etc., I am convinced that he has discovered a great physiologic truth not heretofore recognized, and he must be fully credited with bringing forward this most important question. Whether or not we agree with him, we must at least recognize the facts on which his contention rests.

The villi of the small intestine are to man as roots to a tree. In early fetal life the first half of the large intestine contains villi the same as the small intestine; and while these villi in later development are lost as anatomic structures, the power of absorption remains. We speak of rectal feeding as though food were actually absorbed in the rectum. As a matter of fact, food or other material placed in the rectum is promptly

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* Read before the Section on Obstetrics, Gynecology and Abdominal Surgery at the Sixty-Fifth Annual Session of the American Medical Association, Atlantic City, N. J., June, 1914.

[1] Jackson: Tr. Western Surg. and Gyn. Assn., 1908, xviii, 269.

[2] Rokitansky: Handbuch der spec. path. Anat., 1842.

[3] Lane: Brit. Med. Jour., May 4, 1912, p. 989; Surg., Gynec. and Obst., November, 1910, p. 195; Lancet, London, Dec. 21, 1912, p. 1706.

[4] Pilcher: Ann. Surg., January, 1912, p. 1.

[5] Gerster: Ann. Surg., 1911, liv, 325.

[6] Gray: Brit. Med. Jour., Jan. 24, 1914, p. 177.

[7] Pringle: Brit. Med. Jour., Jan. 24, 1914, p. 183.

[8] Binnie: Month. Cycl. Pract. Med., 1905, xviii, 341.

[9] Eastman: Surg., Gynec. and Obst., April, 1913, p. 341; ibid., February, 1914, p. 228.

[10] Flint: Johns Hopkins Hosp. Bull., October, 1912, p. 302.

carried by reverse peristalsis toward the head of the colon for absorption and assimilation.

What is the function of the large intestine? Beyond the splenic flexure it is to a great extent a storage organ. But proximal to the splenic flexure the colon, and especially the cecocolon, has a most important assimilative function. We know that in the carnivora the large intestine is small as compared with its great size and importance in the herbivora. In the herbivora the large intestine and especially the cecocolon may be compared to a silo in which fermentation of vegetable matter takes place, freeing nutritive material of the greatest value.

The function of the appendix, a part of the large intestine, is practically unknown. The organ in man has been looked on as the vestigal remnant of a herbivorous cecum. Keith[11] dissents from this view, believing that the appendix is a lymphoid organ having a function comparable to that of the tonsil and solitary follicles of the intestine. Ribbert[12] has demonstrated that beginning at adolescence a progressive involution takes place in the appendix, and that in persons at the age of 50 one-half of all appendixes show age characteristics. An appendix which would be normal in a person at 50 years would be abnormal in a child. The same may be said of the tonsil.

C. H. Mayo,[13] in 1903, pointed out the surgical significance of the progressive atrophy of the lymphoid structures of the body after adolescence, thus explaining why cancer in old persons does not spread with the rapidity it does in youth because of the atrophy of the lymphatics.

We must therefore look on the appendix as a lymphoid organ which in early life has some value in connection with cecocolic metabolism. It is interesting to note that in the carnivora, which do not have an appendix, lymphoid tissue of the same nature as that found in the appendix is to be found at the apex of the cecum, the site of the appendix were it present.[14]

It has been suggested that the appendix may through chronic inflammation vaccinate the patient against subsequent colon infections.

Reasoning from analogy, we can say that the functional activity of the proximal half of the large intestine concerns vegetable intake. It has been shown that within 100 years the flesh intake of man has increased four times.[15] The decomposition of unassimilated flesh food develops poisonous substances. It is reasonable to suppose that when these end-products are passed into the large intestine, which has developed to a full extent only the power of caring for vegetable material and fluids, such products may be absorbed, thus disturbing the sympathetic balance and producing many of the symptoms which we speak of in our ignorance as neurasthenia, and which sometimes have been thought to be the result of mechanical conditions, bands, kinks, etc. In this connection, a peculiar type of constipation with a thin-walled bowel with no abdominal distention may frequently be noted. The abdomen is soft and silent as compared with that encountered in true mechanical obstruction with its intestinal stiffening, colic and abdominal distention. The general condition of the patient often well illustrates this sympathetic disturbance. A severe case may even resemble an exophthalmic goiter, for which it may be mistaken. Why may not these persons be cured by a purely vegetable diet? When we consider that man as a species is at least 500,000 years old and that his present characteristics have slowly evolved—so slowly, indeed, that the evidences of prehistoric man show him anatomically to be essentially the same as to-day—the futility of attempting to change during the lifetime of a single individual the whole history of race metabolism is evident.

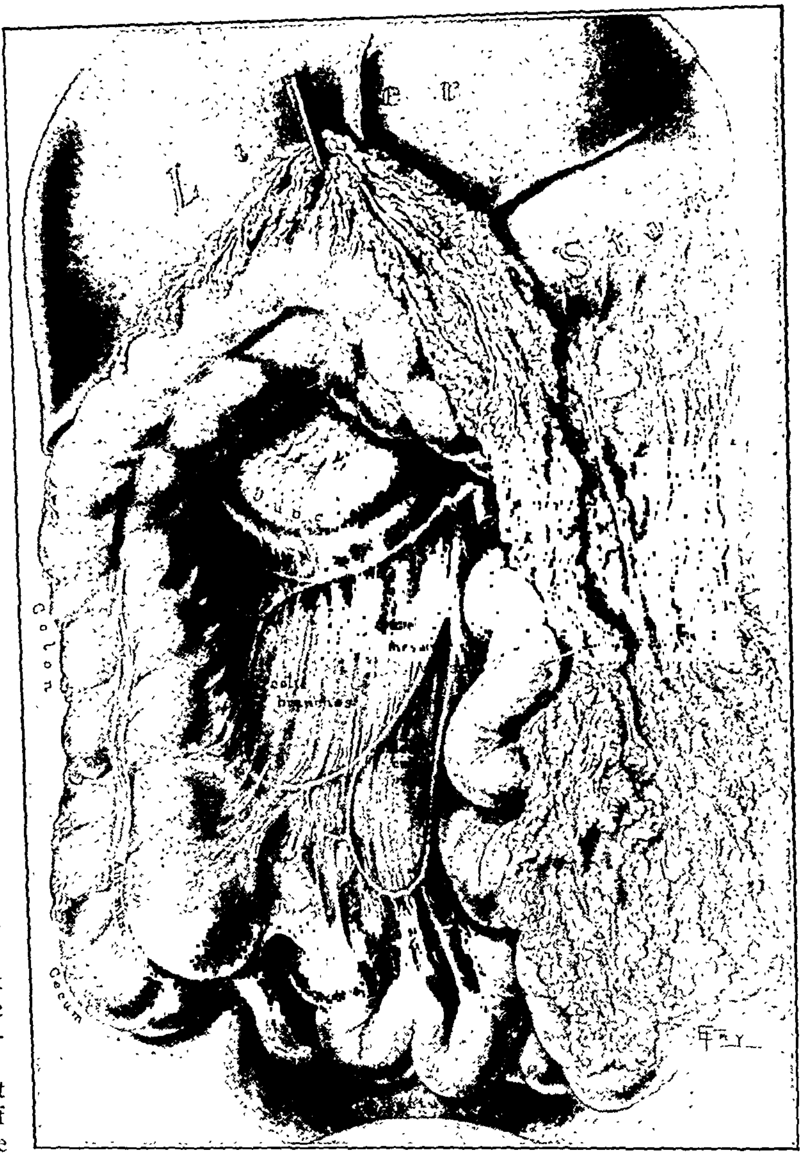

Fig. 1.—Anatomy of the lower ileum and first half of the large intestine.

Adami[16] objects emphatically to the use of the term "auto-intoxication," since proof of such process is lacking. He believes that a low grade of bacteriemia with a local *subinfection* of various vital organs is responsible for the disturbance, and in this he is probably correct in most cases; but obstruction of the bowels produced experimentally by Whipple, Stone and Bernheim[17] shows the poisonous effect of the secretions of the upper jejunum and duodenum when acutely blocked, independent apparently of infection, an effect which these authors speak of as an "intoxication." Clinical experience in acute intestinal obstruction as it occurs in man seems to bear out these experiments. For this reason a high enterostomy in acute intestinal obstruction gives quicker and surer relief than one down closer to the actual point of obstruction.[18] Vaughan,[19] in his notable work on protein metabolism shows the specific character of the poisonous effects which are produced by failure properly to split up proteins and their relation to food idiosyncrasies and anaphylaxis.

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[11] Keith: Lecture, Royal College of Surgeons, October, 1913.

[12] Ribbert: Virchow's Arch. f. path. Anat., cxxxii, *66.*

[13] Mayo, C. H.: Tr. South. Surg. and Gynec. Assn., 1903, xvi, 442.

[14] Corner: Ann. Surg., 1910, lii, 512.

[15] Armstrong: Brit. Med. Jour., July 8, 1905, p. 68.

[16] Adami: Brit. Med. Jour., Jan. 24, 1914, p. 177.

Hypersecretion or hyposecretion of the thyroid and hypophysis and the various other glands of internal secretion may have its counterpart in like conditions of the glands of the intestinal mucosa. In lieu of a more expressive term and in the absence of a scientific explanation of the clinical phenomena, intoxication may be used temporarily as a term to express the hypothetical condition. Intoxication is at least a graphic term for these conditions, meaning the absorption of chemical substances, no matter how produced; substances which may be absorbed without leaving in their path infective lesions in the mucosa of the intestine at the place of absorption or resulting in the bacterial invasion of organs.

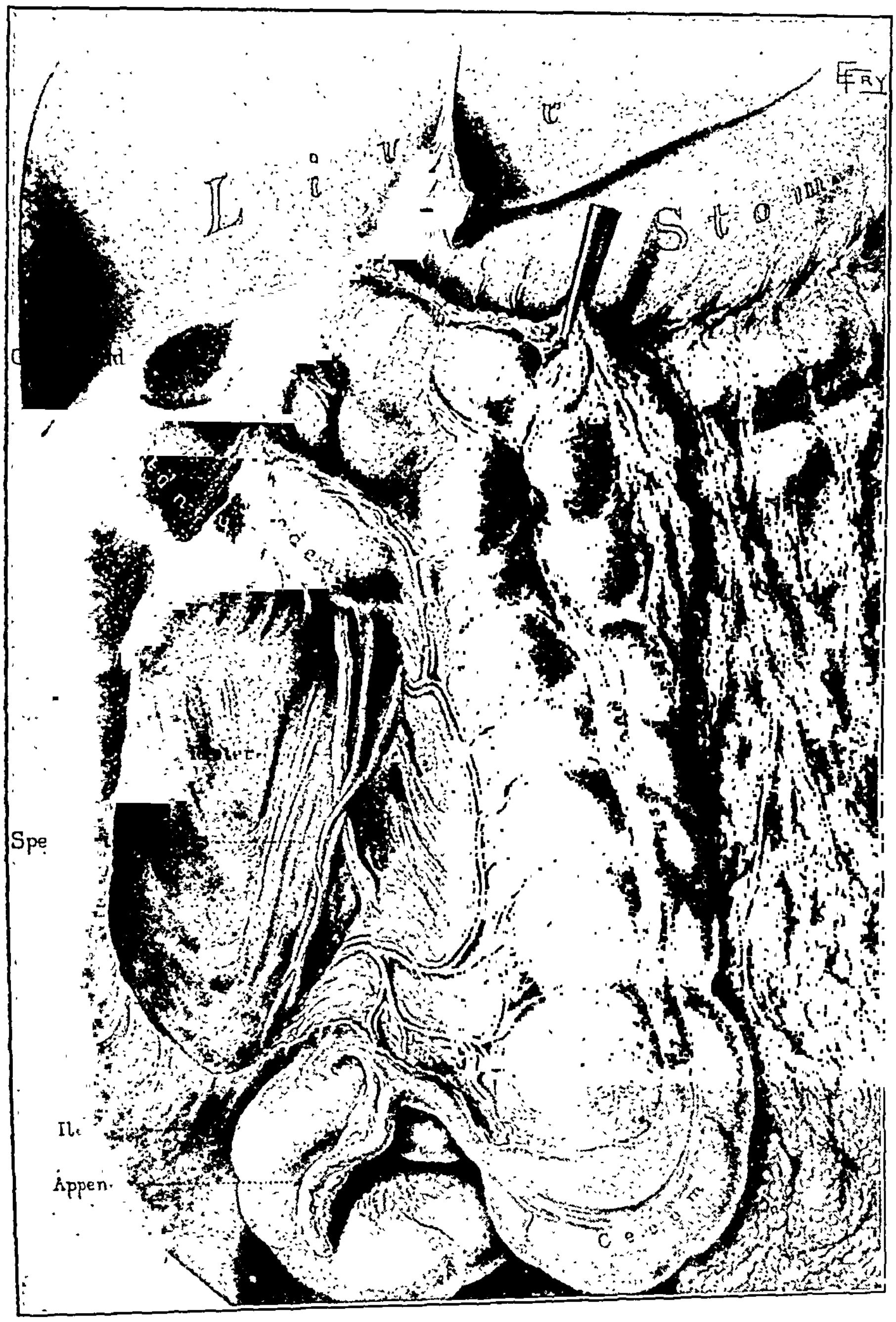

Fig. 2.—Division of the peritoneum which binds cecum and ascending colon to the abdominal wall. Retro-duodenum spermatic vessels and ureter exposed.

Putting aside for the moment these anatomic and physiologic considerations, I wish to discuss the effect of the removal of the cecocolon, first, as a means of physiologically limiting absorption, and, second, as to its effect on the storage function of the bowel, that is, on constipation. These two conditions go hand in hand: namely, so-called stasis of the large intestine with a train of nervous derangements and constipation. In 1900, I reported[20] some cases of obstinate constipation which had been cured by an enlargement of the ileocecal orifice, and suggested that constipation may be many times primarily dependent on constipation of the small bowel; that food products might be retained in the small intestine for too great a length of time and not furnish the necessary chemical stimulation to activate the large intestine. I am convinced that the observations which were made at that time and which have been continued in the intervening years were essentially true, and that we may go still further and say that retention of these products not only in the small intestine, but in the cecocolon has a similar effect in diminishing the stimulation to action in the storage-half of the large intestine. Lane,[21] by means of ileocolostomy, has apparently demonstrated the value of this stimulation and its effect not only on constipation, but also on the metabolism of the individual. Hertz and Newton[22] have shown that food intake furnishes a gastro-ileac reflex and the ileocecal valve opens and allow the lower ileum to empty its contents. A gastrocolic reflex occurs simultaneously and the cecocolon forces its contents onward. It is possible that the ileocecal valve is controlled by the cecocolon just as the pylorus is controlled by the duodenum. Ileocolostomy, however, in a certain percentage of cases, especially in adults, leads to an impaction in the disused colon through reversed peristalsis, and thus in some cases to a continuous absorption of poisonous products quite as though ileocolostomy had not been performed.

From a small number of patients — about twenty — in whom exaggerated conditions of cecocolic stasis with the train of general nervous symptoms which go with it and in all of whom constipation amounting to obstipation was present, we have removed 10 inches of the terminal ileum, appendix, cecum, ascending colon, hepatic flexure and a portion of the transverse colon, but not trespassing to a great extent on the part of the transverse colon which contains the omentum. If all of the omentum is removed, as happens in colectomies, in many cases intestinal adhesions of the most severe type subsequently occur, often causing unfortunate sequelae. The cases in which operation was performed were all of an advanced grade and in all there were bands, kinks, adhesions and possibly obstruction, but, if so, of the peculiar silent type with a soft abdomen and without muscular hypertrophy of the intestinal wall.

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[17] Whipple, Stone and Bernheim: Jour. Exper. Med., February, 1914, p. 144.

[18] McKenna: Surg., Gynec. and Obst., December, 1913, p. 674.

[19] Vaughan: Protein Split Products in Relation to Immunity and Disease, Philadelphia, Lea & Febiger, 1913.

[20] Mayo, W. J.: Ann. Surg., 1900, xxxii, 364.

[21] Lane, W. A.: The Operative Treatment of Chronic Constipation, New York, Paul B. Hoeber, 1909.

[22] Hertz and Newton: Jour. Physiol., 1913, xlvii, 54.

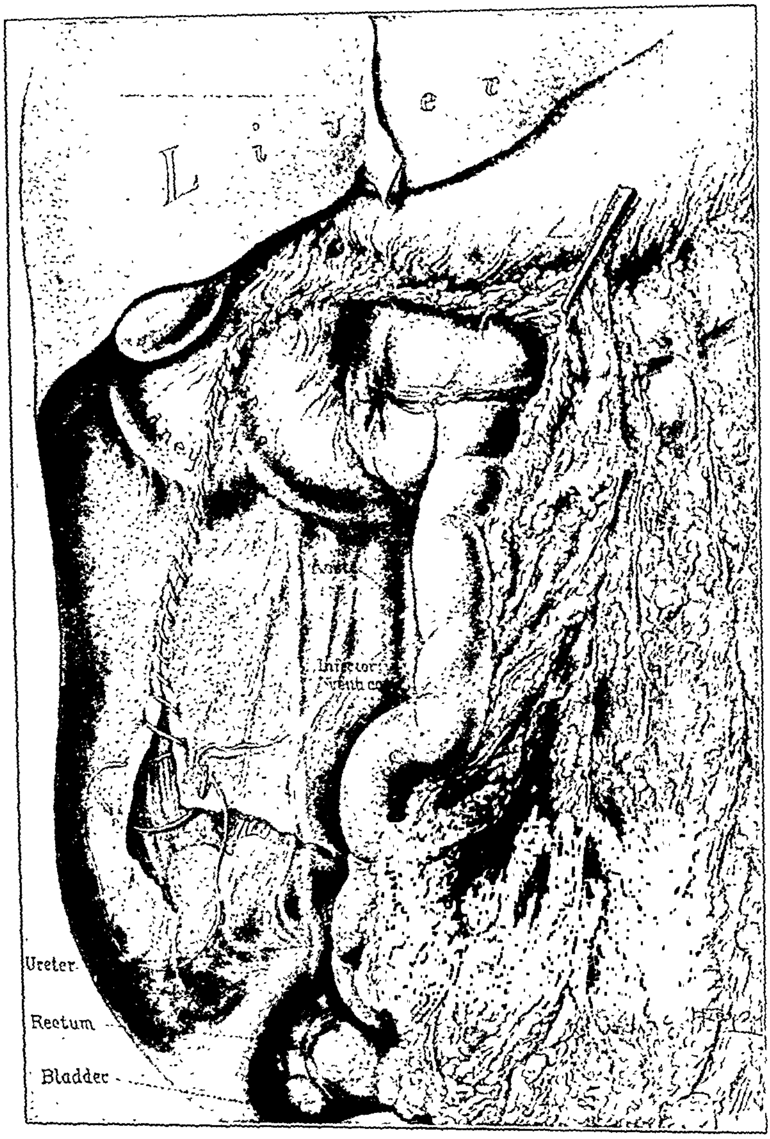

Fig. 3.—Result after removal of 10 inches of ileum, appendix, cecum, ascending colon, hepatic flexure and one-fourth of transverse colon. End-to-side ileocolostomy. Running suture closing peritoneum of posterior wall.

In the cases in which we have made the above mentioned resection, and joined the end of the ileum to the side of the transverse colon, there has usually been a marked improvement in the general condition of the patients, and in 87 per cent. relief from the constipation. In nearly all these patients the appendix had previously been removed, and in a number of them other operations, such as elevation and fixation of the cecum combined with narrowing of its lumen, etc., had been done without relief. To test the question of the effect of eliminating the ileocecal mechanism and removing the proximal colon in constipation, we have grouped together all the cases in which the head of the colon was removed without regard to the pathologic conditions which lead to the operation, and have investigated the effect the operation has had on the evacuation of the large intestine. It was found that nearly all the patients who had been constipated before the operation have been much relieved postoperatively. Yet in but one case has diarrhea been manifested. It would seem a reasonable assumption, therefore, that in physiologic disturbance of the terminal ileum and cecocolon lies the cause in some cases at least of the protean manifestations of intestinal toxemia and constipation, and that the removal of the cecocolon will relieve many of these patients.

Although the operation is a serious one, we have lost no patients operated on for this condition. The number of persons whose condition in our opinion would warrant the risk, however, is comparatively small, and I cannot but deplore the widespread adoption by the medical profession of surgical measures for this or allied conditions while it is in the experimental stage with little evidence to show that the supposed cures are permanent. When one looks back over the fads and fancies in medicine, especially as applied to the so-called neurasthenic group of patients, one may well pause and make haste slowly.

THE REDUNDANT SIGMOID [*]

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CINCINNATI

THE NORMAL SIGMOID

The sigmoid flexure, more properly called the pelvic colon by the French, the segment of intestine which connects the descending colon with the rectum, is of variable length. In cases in which it was functionally normal, or, in other words, in which it was symptomless, I have seen it as short as 15 cm. (6 inches), and I have encountered it as long as 85 cm. (32 inches), while other observers have found it as long as 108 cm. (42 inches). In a series of sixty-two cases of reundant sigmoid of which I have roentgenographic records, I have not so far had occasion to observe a single instance of sigmoid over 25 cm. (10 inches) in length in which it was not the seat of either functional or organic disturbance logically attributable to redundancy. I do not assume that sigmoids of more than 25 cm. (10 inches) in length do not exist in which, for most of the time at least, the function of the intestine is exercised without perturbation. Cases of this kind, however, do not come to me for treatment and I, therefore, have no occasion to observe them. From these facts, I am forced to conclude for the present, that while in the adult, the normal sigmoid is from 15 cm. (6 inches) to

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[*] Read before the Section on Obstetrics, Gynecology and Abdominal Surgery at the Sixty-Fifth Annual Session of the American Medical Association, Atlantic City, N. J., June, 1914.

25 cm. (10 inches) in length, the question as to what is and what is not a normal sigmoid relates quite as much to physiology as to anatomy.

RELATIONS OF THE SIGMOID

The full surgical significance of the colon, or to put it more broadly, its full clinical significance, cannot be comprehended without due consideration of its relations. It is important at least to remember that, in the male, the sigmoid, when redundant, may lie in contact with the left ureter, the left iliac vessels and the left sacral nerves, the bladder, prostate and rectum; while in the female, it may lie in contact not only with these structures, excluding, of course, the prostate, but also with the vessels in the left broad ligament, with the left fallopian tube and ovary, and with the uterus itself. The pelvic lymphatics on the left side may also be subject to pressure by a redundant sigmoid. The degree to which these structures are influenced by the superimposed weight of the redundant sigmoid is, of course, relative to the redundancy itself, to the incidental development of the mesosigmoid and, still more incidentally, to the amount of sigmoidal content.

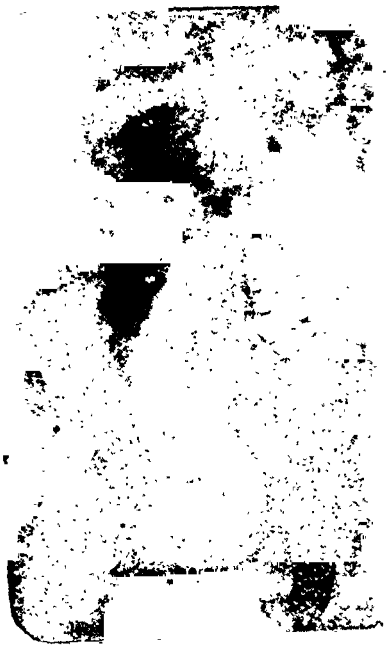

Fig. 1.—In this and the following roentgenograms are illustrated some types of sigmoid as shown by the Roentgen ray. In this illustration is shown very redundant sigmoid which drops above the umbilicus when the patient's shoulders are lowered. (Trendelenburg position).

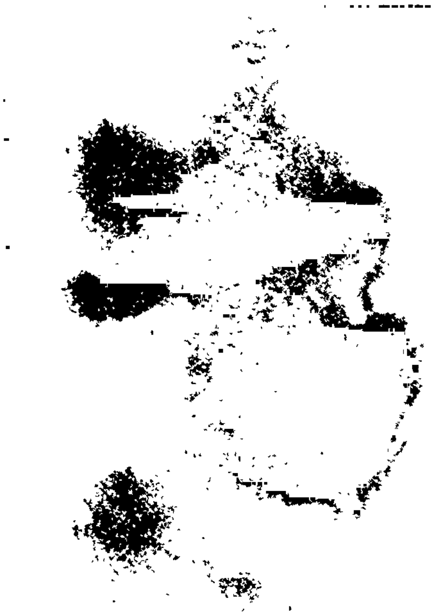

Fig. 2.—(Trendelenburg position) showing large sigmoidal loop which drops heavily on the pelvic organs when the patient is in the upright posture.

THE FUNCTION OF THE SIGMOID

It is probably true that, in the normal person, the sigmoid is chiefly a conduit for the less rapid transit of the intestinal content from the colon to the rectum. In other words, in the healthy subject, it is after periodic and more or less rhythmic evacuation generally relatively free from fecal content. At the same time, it must not be forgotten that the sigmoid is provided with an active absorbent apparatus whose ostia connect with the chyliferous apparatus in the mesosigmoid, which in turn connects with the larger chyliferous vessels in the mesocolon. It is furthermore to be remembered that the sigmoid is the habitat of an abundant flora. In addition to this, especially in cases of fecal stasis, are to be found the usual toxins that result from bacterial decomposition. These facts, thus briefly stated, indicate at once the great functional importance of the sigmoid and its potentiality as a possible disturber of the peace in the human economy.

SOME PATHOLOGIC STATES OF THE SIGMOID

The disturbances which I shall consider in this connection as being caused by the sigmoid are due to function-disturbing variations from the normal type. Those which I wish more particularly to present to-day are based on observations in cases in which I have operated specifically for conditions within the sigmoid itself, as in the accompanying tabulation.

Redundancy	18	
Neoplasms	5	
Diverticula	2	
Adhesions	4	29
Redundancy and ptosis in connection with similar conditions of the colon	43	14
Total		43

This table represents less than 50 per cent. of the cases that have been referred to me for operation, and in which I have demonstrated a sigmoidal factor, the remainder of the cases having been afforded a *modus vivendi* by other means. It likewise represents less than 20 per cent. of the cases in which I have found redundant sigmoid as the concomitant of redunant and, of course, ptosic colon. In fourteen of these colosigmoidal cases, as shown in the table, I have corrected the condition of the sigmoid. The latter operations have been done in my later practice, and since I have become convinced of the important rôle of the redundant sigmoid as a factor in the causation of disease. At the same time, it represents all the cases, eleven in all, in which I have so far operated for neoplasms, diverticula and adhesions that were essentially restricted to the sigmoid. This, I believe, is in a measure an index to the relative frequency of these conditions. I shall, in the present instance, confine my attention to a discussion of the redundant and ptosic colon.

REDUNDANT SIGMOID

The sigmoid is here considered redundant in all instances in which it is in excess of 25 cm. (10 inches) in length, and in which it is the seat of symptoms logically referable to redundancy. There are, of course, no data on which one may estimate the frequency of this condition for the simple reason that symptomless subjects do not submit themselves for examination. There are, however, many variations in the morphology of the redundant sigmoid.

A very constant feature is the redundant mesosigmoid which, in both normal and abnormal subjects, is always relatively short above at the juncture of the sigmoid with the descending colon, and, below, at its juncture with the rectum. It is always relatively long, sometimes very long, occasionally as much as 25 cm. (10 inches) in the interval between these two points.

THE DIAGNOSIS OF REDUNDANT SIGMOID

The diagnosis of redundant sigmoid is based on a very variable symptomatology. Probably the most constant symptom is constipation, with more or less colicky pains. These colicky pains are more liable to precede than to attend efforts at defecation, although they may be experienced at both times. The constipation is liable to alternate with diarrhea, especially in cases of so-called mucous colitis with a large proportion of mucous content in the stools. There are generally more or less pressure-symptoms in these cases. Pain referable to pressure on the sacral plexus, generally more marked on the left side, but often present on both sides, is generally present. Cystic irritation, generally without mucus in the urine, is rather a frequent complaint. In men, there is often discomfort distinctly referable to the prostate and obviously resulting from pressure on that gland. In women, there is generally marked tenderness in the ovarian regions, especially on the left side. This may be due to pressure not only on the ovary itself, but also on the vessels and nerves within the broad ligament.

Pain at the more fixed points of the colon, namely, the hepatic and splenic flexures, is frequently present, because of the frequency with which the redundant and ptosic colon is a concomitant of the redundant and ptosic sigmoid. Pain just under the margins of the ribs in the left upper quadrant is especially significant of angulation and consequent retardation at the splenic flexure.

In many of these cases, hemorrhoids, due both to pressure and to straining at stool, exist as a distinct complication. One important fact that I have observed as a very constant feature in the several hundred cases that I have examined is that pain referable to the redundant and overloaded sigmoid is generally relieved when the sigmoid is emptied, and that it remains relieved as long as it remains empty.

Physical examination generally reveals dulness in the left lower quadrant. This is sometimes associated with fulness which, in extreme cases, is suggestive of a new growth. There is very liable to be an abnormal increase of resonance over the colonic areas which, it should be remembered in these cases, owing to generally equally redundant colon, are to be found entirely in the lower zone of the abdomen. Female patients should be examined in the erect posture, by digital exploration of the vagina, when pressure, sometimes with a mass, may be detected above the pelvic diaphragm. I have found examination by the proctoscope and sigmoidoscope not only annoying to the patient, but also of negative value as means of diagnosis in these cases.

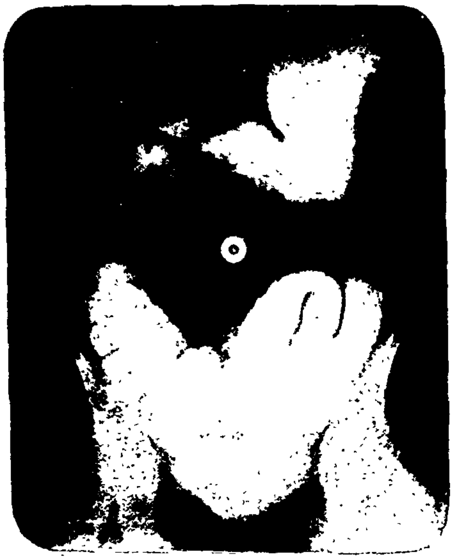

Fig. 3.—A very large sigmoidal loop associated with cecum mobile and ptosic colon (erect posture).

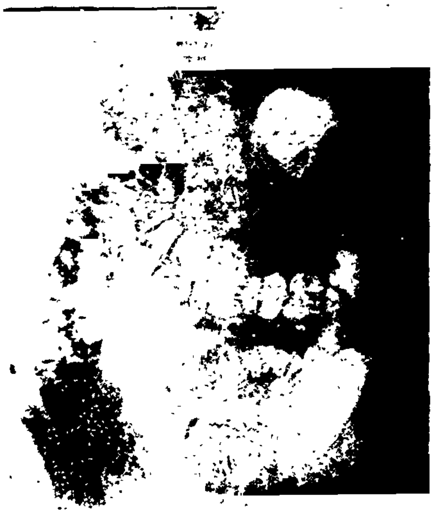

Fig. 4.—Figure-of-eight sigmoid (Trendelenburg position).

ROENTGEN EXAMINATION FOR REDUNDANT COLON

The conclusive method of examination is, of course, by the Roentgen ray. It is important in this connection to state that these pictures should always be made by an expert, and that to give an adequate conception of the case, certain cardinal rules should be observed namely: (1) The large bowel, clear to the cecum, should be emptied; (2) the barium solution should be used in quantity sufficient to fill the large bowel clear to the cecum; (3) pictures should be made with the patient in the erect, the recumbent and the extreme Trendelenburg posture; (4) the patient should then be given not less than 8 ounces of the barium solution by mouth; (5) pictures of the stomach should then be taken with patient in various positions; (6) pictures, especially with the patient in the Trendelenburg position, should then be taken beginning about fifteen hours after ingestion of the solution, and at shorter intervals thereafter, until all the barium has passed into the rectum; (7) time observations of stomach clearance and of food transit are best made after incorporating barium with an ordinary meal.

These rules, adopted by Dr. Sidney Lange, who has made practically all of my Roentgen-ray examinations, have yielded results which in no instance have failed of confirmation at the subsequent operation.

LOCAL SEQUELAE OF REDUNDANT SIGMOID

Local sequelae of the redundant and ptosic sigmoid are various and may be classified as (1) those that relate to the sigmoid itself, and (2) those that relate to adjacent organs and structures.

1. Among those that relate to the sigmoid itself is inflammation. In practically all of my cases, there has been a history of sigmoiditis sometimes present at the time of examination, but more generally with a history of previous attacks, characterized by mucous diarrhea. This is due not only to mechanical interference with the blood circulation, but especially to mechanical retardation of the fecal current with a consequent elaboration of the toxins of bacterial origin. In certain instances, the follicular infection becomes so pronounced that the endothelium is

broken down, granulation tissue is thrown out and more or less distinct areas of ulceration are developed. Secondary to these changes and as a necessary incident to their recovery, is the formation of bands of scar tissue which, in turn, become sources of irritation. These changes are most liable to occur at the juncture of the sigmoid with the rectum. The fact that it is precisely at this point that cancer is most liable to occur, and the well-known relation of this disease to persistent irritation, certainly comprise a substantial reason why the underlying causative condition should not be allowed to continue. It should be remembered, too, that when the endothelium is once broken down, atria are thereby formed for the convenient introduction of other infections.

2. Among the intrapelvic disturbances induced in *adjacent organs and structures* by the redundant sigmoid are chiefly those which may be attributable to pressure. I have already called the attention of this Section to the influence of this pressure in causing uterine displacements and functional disorders of the ovaries characterized by pain, especially at the menstrual period.[1] I have already referred in this paper to the effect of this pressure in inducing irritation of the bladder in both sexes and of the prostate in the male. The influence of this condition in causing hemorrhoids and their sequelae is so generally recognized and is so manifest that its further discussion is not required in this connection.

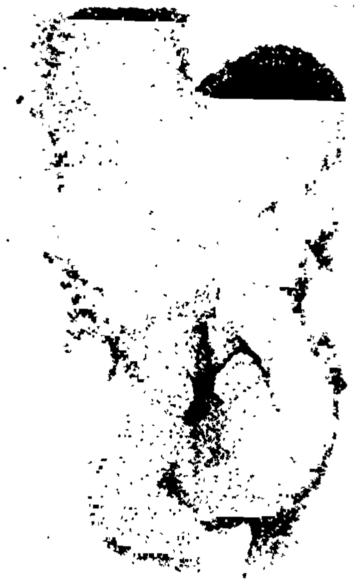

Fig. 5.—A redundant letter S sigmoid was the source of pressure on the prostate (recumbent posture).

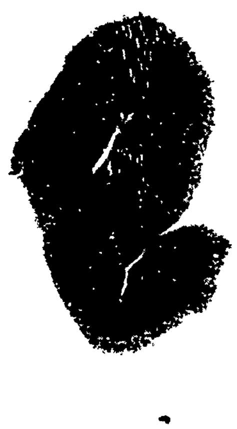

Fig. 6.—An enormous sigmoidal redundancy with hypertrophy but without corresponding condition in the colon (upright position).

SYSTEMIC SEQUELAE OF REDUNDANT SIGMOID

It is, however, with the remote or systemic consequences of the redundant sigmoid that the general practitioner has his most baffling contention. These induced systemic states, so far as they relate to the sigmoid, are less confusing if they are recognized as being most generally equally attributable to colonic origin. In other words, redundancy and consequent ptosis of the sigmoid and the colon occur so generally together that both must be taken into account in the estimation of their systemic consequences. I am, however, to-day emphasizing the sigmoid end of the proposition only because it represents the etiologic factor now most generally overlooked by both the general practitioner and the surgeon.

It may, therefore, be said at the outset that the remote or systemic results of redundant colon are effected through two distinct avenues of influence: first, the circulations: and second, the nervous system. It is obvious, from what has already been said, that toxins elaborated from the abundant bacteria, as the result of fecal stasis, first reach the system through the ordinary channels of absorption. A little later, when the endothelium is broken down, these toxins and other infectious elements may find a short cut into the blood-current. In these ways, one or both, the blood becomes the effective final carrier and distributor of agencies that deleteriously influence not only metabolism, but specifically the processes of hematogenesis.

While this is going on, we have to reckon with the element of pain. It takes violent muscular effort on the part of the large bowel to force hardened fecal masses around sharp corners. This means pain, sharp colicky pain, and persistent pain means unhappiness while it lasts, and more or less exhaustion of the centers when it is over. The pressure exerted on other organs, such as the ovaries, the fallopian tubes, the bladder, the prostate, the rectum, causes pain, and this pain, too, is registered on centers already hypersensitized by toxic agents carried to them by the blood.

Then, following in the wake of this unhappy state, are other changes of more serious significance. With the infection thus reaching the circulatory current, we have established what is now recognized as the underlying pathology of rheumatism, gout, arthritis and arteriosclerosis — a relationship that was pointed out by Glénard thirty years ago under the general term of "arthritism." We trace the process a little farther and find these toxins, together with toxic products of metabolism, carried to the great emunctories for elimination. These organs, in turn, become the seat of infection and of secondary changes, such as are manifested in chronic interstitial nephritis and in chronic interstitial hepatitis with their end histories of cirrhosis—a process likewise recognized by Glénard and designated by him under the general term of "hepatism." In other words, a survey of the systemic conseqences of the infection, or the subinfection, or the intoxication originating in the large intestine, forces on us what the late lamented Forchheimer designated as "a new viewpoint in medicine."

SECONDARY SYSTEMIC SEQUELAE

There are certain conditions which do not comprise distinct links in the chain of events as defined by Glénard, which are materially influenced, if not determined, by colosigmoidal redundancies and consequent stasis. They are, for the most part, conditions resulting from entirely independent causes, generally infectious, which are obviously logically and inevitably influenced for the worse by the toxemias and the nerve perturbations incident to the conditions just enumerated. Let me make a few illustrative citations:

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[1] Reed, Charles A. L.: Constipation and Headache in Women, The Journal A. M. A., Aug. 3, 1912, p. 354.

An eminent lawyer, after three years' confinement in a sanatorium for simple melancholia, was referred to me by Dr. Herman H. Hoppe of Cincinnati; restoration of the sigmoid and colon by my fixation methods resulted in his return to a large practice within two months after operation.

A merchant referred to me by Dr. J. W. Hall of Chicago had been a neurasthenic for years, was mentally depressed and had interstitial nephritis (a link in the Glénard chain); an ileosigmoidostomy resulted in his complete restoration to health, including disappearance of his kidney complication, and in a realization of efficiency beyond his original standard.

A physician had been compelled to abandon his practice because of persistent pain, including a chronic prostatitis; an anastomotic operation, excluding both the colon and the upper loops of the redundant sigmoid, resulted in a cure of the prostate, the disappearance of all neuropsychic phenomena and the resumption of a large practice.

A young woman who had been for a time in the Ohio Tuberculosis Hospital at Mount Vernon, was referred to me by Dr. ——— of Loveland; a fixation operation resulted in the complete restoration of her nutrition and the ability to throw off any remaining tuberculous infection.

Cases of diabetes mellitus have shown marked improvement following restoration of normal conditions within the large bowel. Rheumatism bears such a demonstrable relationship to infections of intestinal origin, that cardiac complications of rheumatic origin must be reckoned among the remote sequelae of such infection.

The situation may be summarized by the statement that any systemic or even local disease that is deleteriously influenced by impaired nutrition must necessarily have an important sequent relationship to coexisting redundancy of the sigmoid and colon. In other words, this condition of the elementary back must take its position among the local infections and must be treated accordingly.

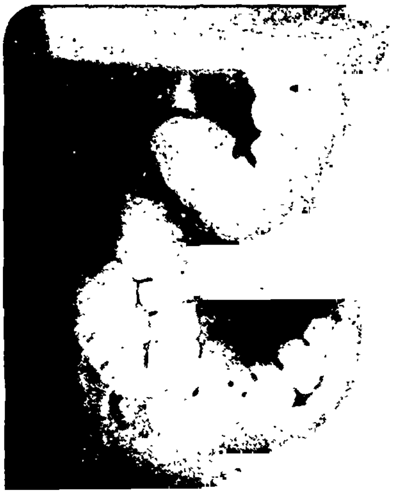

Fig. 7.—Sigmoidal loop with ptosic colon but with stomach in relatively normal position (Trendelenburg position).

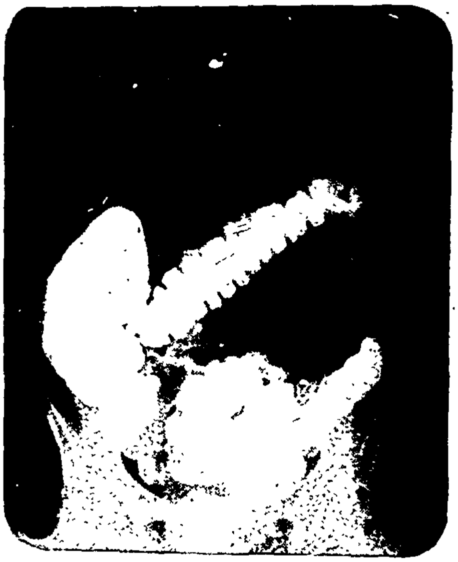

Fig. 8.—Figure-of-eight sigmoid (redundant) complicated with acute angulation of the colon at the hepatic flexure (recumbent position).

TREATMENT OF REDUNDANT SIGMOID

The question of treatment is to be solved only in recognition of the demonstrated pathology of redundancy and ptosis and in the light of the clinical conditions presented in each individual case. Thus, if the obstipation is not difficult to overcome, or at least to mitigate, certain lines of palliative treatment may be adopted with temporary advantage, but, of course, with no hope or prospect of ultimate cure. If, on the other hand, the obstipation is persistent and, especially, if either local or systemic sequelae, or both, have developed, nothing short of surgical intervention can bring the slightest hope of permanent relief. This brings us to the contemplation of (1) palliative and (2) curative treatment.

1. Palliative treatment may be relied on, in a certain limited number of cases, to afford a *modus vivendi* without, however, offering any prospect of eliminating the underlying or causative condition. In many cases I have been able to make patients very comfortable for a considerable length of time, and without operation by a course somewhat as follows:

Postural Treatment with Massage.—The patient is taught to utilize the Trendelenburg posture. This is done by means of an extemporized inclined plane, ordinarily an ironing-board, one end of which is placed on the side of the bed and other end on the floor. The patient lies on this, heels up and head down, the board coming to the nape of the neck. While in this position, which is maintained for a period of from ten to fifteen minutes, two or three times a day, the patient herself massages her abdomen by drawing the viscera toward the diaphragm. It would seem that the downward displacement of certain abdominal organs is a penalty that we pay for assuming the upright posture and that to stand on our heads, or as nearly on our heads as possible, is the logical correction. In carrying out this practice, I have discovered that it has another incidental advantage, which is, that by gravity it forces the nutrition of the brain and higher centers. When these centers have been depressed, almost exhausted, by pain, both physical and mental, and by toxins transported from the intestines to the brain through the circulation, the condition that they present is essentially that of anemia. This condition is best relieved by having the blood forced into the brain in maximum quantity compatible with health—a principle which may be utilized with advantage in certain neurotic and neuropsychic states that may occur quite independently of the visceral complications that I have been discussing.

Dietetic and Medicinal Treatment.—The diet is looked after by giving laxative foods, especially the grits and fruits. The patient is taught to drink copious draughts of very hot water, from a pint to a quart, immediately on arising, if necessary, repeating the libation before each succeeding meal. This is often all that is required to secure free action of the bowels. When, however, it proves inefficient, I add to the water a small quantity of some laxative salt of sodium or magnesium, preferably the former. Vichy water, or the salt made therefrom, may be effectively employed in this way. On general principles, however, the less medicine the better. I am employing the petroleum oils with advantage as a mere lubricant of the intestines. Liquid petrolatum, petrolatum, oil of petroleum and paraffin oil are products belonging to this class, and of about equal efficiency.

Mechanical Treatment.—While the postural treatment—including hydropathic—already mentioned may be considered mechanical, I am using the term in a restrictive sense as applied to external appliances, such as belts and braces. It is obvious, from a moment's glance at the anatomy involved, that no such appliance can be effective in preventing the ptosis of a redundant sigmoid. On the contrary, such an attempt to hold up this segment of the bowel can only result in pushing it farther down in the pelvis. So true is this that, for the relief of such cases, it is important that even the incidental pressure of clothing suspended about the waist should be interdicted. Another phase of mechanical relief is that by enemas, by which the fecal content is softened, the weight of the redundant bowel lessened, and the consequent pressure diminished.

2. Contrasted with palliative treatment is curative treatment. While such expedients as posture, massage, diet, medicine and lavage may, in certain cases and for a time, bring a measure of relief, it is obvious that neither all nor any of them can in the least remove the underlying redundancy and the consequent ptosis. In other words, they are mere temporary expedients, the tendency of which is indeed to lower the functional efficiency of the bowel and thus ultimately to aggravate the original ill health of the patient. It is obvious that nothing but surgical intervention can be recognized as having curative significance. But, before considering these measures in detail, it is important again to remember what I have tried to keep constantly to the forefront in this essay, namely, that this condition of the sigmoid is generally associated with a corresponding condition of the colon and that to relieve one without relieving the other is to fail in affording ultimate relief to the patient. With this understanding and addressing myself now exclusively to the sigmoidal state, let me say that the surgical expedients which I have found effective are (*a*) sigmoidopexy, (*b*) ileosigmoidostomy, (*c*) cecosigmoidostomy, and (*d*) resection of the sigmoid, to which may be added, as a measure supplementary to the second procedure, (*e*) colectomy.

It is unnecessary here to give text-book descriptions of these respective procedures. A few incidental observations may, however, be helpful in leading to a selection of the measure to be employed. This, in all instances, should be based on the actual condition as revealed by exploratory incision, and should not be predicated entirely on Roentgen-ray findings. The roentgenogram reveals much that is important, but it does not reveal many conditions that are of determining value in the selection of the surgical measure to be employed. With respect to sigmoidopexy, much has been said in a more or less academic way about its "potential dangers." I have no doubt but that some embarrassing consequences have been experienced from this operation by some operators, but I am equally as sure that such consequences have been the outcome of defective methods employed. Indeed, I have done some secondary operations for the relief of patients who had been victimized by precisely such defective methods. In one case, a little 2-inch incision had been made through a thick wall, and the sigmoid had been drawn over to the median line and there firmly sutured in such wise as to give it a permanent acute angle. In another case, the fixation had not only caused similar angulation, but had failed to control the kinking due to redundancy. The resulting complications, for which I was not responsible, were obviously due to defective methods, as shown by the fact that these cases were completely relieved when the fixation was properly effected. In this connection, it is important to say that it is a defect of method to stitch the sigmoid itself, or any part of it, to the abdominal wall, but that the unkinking should be effected by stitching *not* the bowel itself, but the

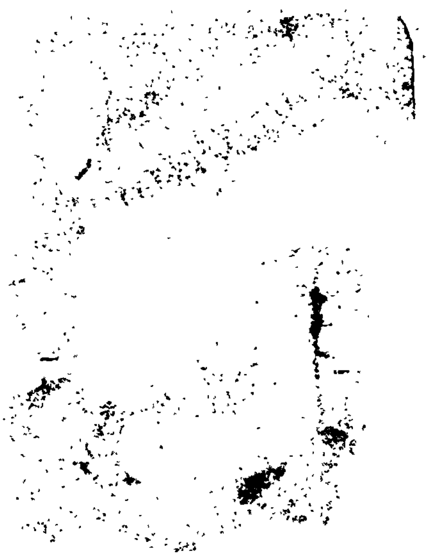

Fig. 9.—Enormous sigmoid loop which was the cause of ovarian dysmenorrhea and other intrapelvic symptoms of pressure (Trendelenburg position).

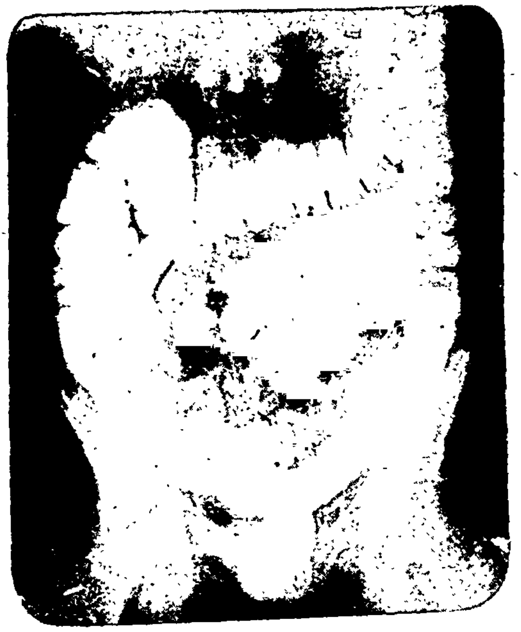

Fig. 10.—Greatly redundant sigmoid lying chiefly in right side of pelvis (Trendelenburg position).

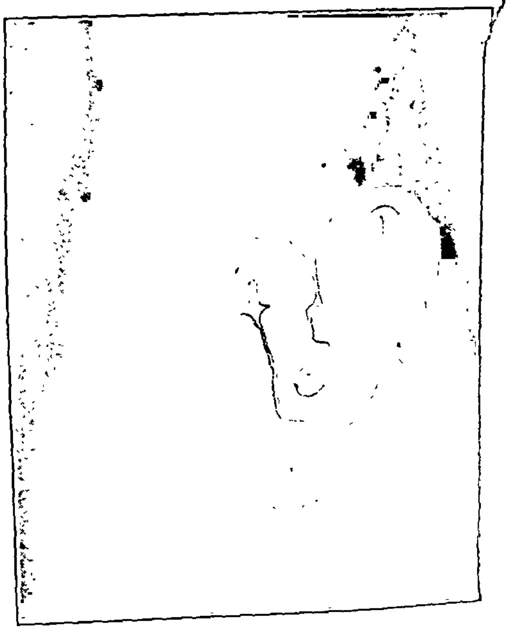

Fig. 11.—Largely redundant sigmoid adherent to anterior abdominal wall (recumbent posture).

redundant mesosigmoid to the parietal peritoneum. This is better done by employing the Pfannenstiel, or transverse abdominal incision. If carefully done by this method and if the colon, when involved, has been brought under similarly effective control, and if other impediments to fecal circulation do not exist, the results are eminently satisfactory.

I would not, however, leave the impression that I look on fixation procedures as the ones always to be employed, or even as the operations of choice. On the other hand, in all cases in which correction cannot obviously be thus effected, resection of the sigmoid with lateral anastomosis of the ends, or ileosigmoidostomy, or cecosigmoidostomy with or without resection or removal of the large bowel may well be employed.

ABSTRACT OF DISCUSSION

ON PAPERS OF DRS. EASTMAN, BONIFIELD, MAYO AND REED

DR. M. L. HARRIS, Chicago: The wide-spread study of diseases of the intestinal tract which has taken place recently has led to the recognition of a number of very important facts which are so prominent that they should be crystallized in our minds at this time. The first of these is that while the intestinal tract during its embryologic and postnatal evolution follows a normal type, yet there is no fixed end stage of this evolution. During the evolution a number of membranes are formed which are but temporary and which as a rule disappear, yet many of these are found to persist after birth. These should not be called pathologic in the sense that they give rise to disturbed function, because they do not, unless they directly cause mechanical obstruction. The next fact is that when we have a disturbance in function due to the presence of these bands of membrane which are found congenitally or to those developing subsequently, the changes are invariably due to changes in the intestinal contents, chemical in nature, bacteriologic or dietetic and metabolic in origin. These conditions arising within the intestines cause the changes in the membranes and bands which then produce the symptoms noted. That gravity plays little or no part in the movement of the intestinal contents or in the emptying of the stomach or colon we discovered long ago in our operations on the stomach. The emptying of these parts is purely physiologic and not a physical process. Any surgical operation done on these patients must be directed to some definite and specific condition mechanical in its nature if any benefit is to be derived from that surgical operation *per se,* and after the mechanical condition has been corrected by proper surgical procedure that patient becomes a medical case and must be followed up by medical treatment, dietetic and other means to change the chemical nature of the intestinal contents, whether of bacterial or metabolic origin. If these cases are not so followed up we may expect relapse with redevelopment of these so-called membranes. The next fact is that while there may be certain physical differences in location and conformation of the intestinal tract, it is a physiologic entity; the entire tract is under a governing and regulating mechanism, and the disturbance of one part must cause disturbance in another. It is useless to disregard the intestinal tract as a physiologic entity in these cases.

DR. JOSEPH SAILER, Philadelphia: As an internist my opportunity to study cases of derangement of the large intestines as a rule antedates that of the surgeon. These cases come to the internist in all stages of the disease. If he has wit enough to discover where the trouble is located and persuasion enough to induce the patient to submit to surgical interference he has fulfilled his entire function until, as sometimes happens, at a later date the patient returns for relief from the old symptoms or new ones which may have developed. I urge a greater cooperation between the medical man and the surgeon. I believe it will be generally conceded that abdominal conditions, above all, are the most difficult correctly to diagnose, and, moreover, that in no class of surgery is the importance of preliminary diagnosis greater. Yet it has been my fate on various occasions to have the surgeon respond to what he probably considered my more or less impertinent attempt to explain my conception of the morbid condition, by the statement that he would see what he found after the abdomen had been opened. The best results will be obtained, however, not when the surgeon accepts the medical man's diagnosis but when he is sufficiently familiar with diagnosis to discuss his cases intelligently with his colleague. Three important conditions are: The importance of considering the possibility of some disturbance in the cecum in all cases of supposed chronic appendicitis. Among these disturbances cecum mobile is not an exceedingly rare condition. In many cases removal of a so-called chronically diseased appendix has failed to relieve the symptoms from which the patients suffer. In one such case, anchoring the cecum secured a restoration to health. 2. Those cases in which there is partial obstruction of the large bowel. This also is, I believe, more common than is supposed and fairly difficult to diagnose. The problem of treatment is complicated by the fact that the patient is rarely willing to submit to an operation and curiously enough it is often difficult to persuade the surgeon to undertake it. Why I do not know, for the relief that an appropriate operation affords is sometimes extraordinary. 3. So-called gastro-intestinal intoxication. There is, unquestionably, a group of more or less vague symptoms associated with chronic, partial invalidism concerning whose cause we are at present at fault. They have been called gout, neurasthenia, lithemia, gastro-intestinal intoxication, disturbance of the ductless glands, sympatheticotonia and vagotonia and of late years ascribed to early disturbance of the sexual psyche. The variety of etiology indicates that an actual demonstrable cause has not as yet been discovered. Therefore, all surgical measures which have to do with combating these cases are necessarily measures undertaken on the basis of an as yet unproved hypothesis. I am inclined to believe that some of the brilliant results of colectomy or short circuiting are due to relief of colonic stasis based on an anatomic factor and not the elimination of an intestinal toxemia.

DR. JOHN H. GIBBON, Philadelphia: The question of colonic stasis has not been settled. We do not know what causes the conditions we encounter when we operate in these cases. I believe also that we do not know—we may think we know—that the symptoms are the result of the conditions which we find. There are few here who cannot remember that patients who suffered very much as these patients we now describe as suffering from colonic stasis, were relieved by other means. The fixing of floating kidneys cured many; the removal of the appendix cured many; the removal of the coccyx has cured many. Now to pass out of the realm of surgery, there are other means less radical that have cured many; mechanical, mental and religious treatment. I believe, then, that colonic surgery has not yet found its proper place. Mr. Lane has forged ahead into a new field fired with the enthusiasm of a pioneer. He has developed a wonderful technic, but I feel that those who attempt to follow him will sooner or later have to make some apology, because Mr. Lane —and I think no more honest man lives than Mr. Lane—in discussing one of his cases of colectomy in which the patient suffered from obstruction due to adhesions, said "Why, if it were not for the postoperative adhesions and obstruction which these patients develop, this operation would be as simple as circumcision." Now it is not as simple as circumcision, and it is our business to recognize the fact that it is not. We have heard of the wonderful results obtained in properly selected cases; the difficult thing is to select the case that will give the good result. A great many things in surgery are easily done that ought not to be done. We have heard of the good results of ileosigmoidostomy. I wish we might hear of all the ileosigmoidostomies that have been done in America—that we might consider why there have been bad results and failures. Let us be honest; we are trying to get to the bottom of this. Two small boys were looking at the poster of a circus and they saw an elephant standing on his trunk, and one boy said, "Do you believe an elephant can stand on his trunk?" "Yes," said the other boy, "there ain't nothing an 'elphant' can't do." Now, gentlemen, there are very few things that a surgeon can't do in an abdomen, but just as it is disastrous for the elephant to try to stand on his trunk, so I think it is disastrous very often, certainly for the inexperienced, to attempt to do what is possible, but what is plainly not indicated. Now I hope that those of us who undertake colonic surgery, will beforehand, read the papers of Dr. Eastman and Dr. Mayo presented here to-day. Of course, I am speaking from the clinical, not the scientific, point of view. If we follow the paper Dr. Eastman gives us we shall see that the last word has not been written. He has shown us that we can make a big stoma in the cecum and attach the cecum to the rectum and that still the colon will not drain. Then how on earth can this operation result in the wonderful cures that we hear about?

Dr. John B. Deaver, Philadelphia: I wish to question the etiology, the cause and effect. No doubt some of these cases of so-called intestinal auto-intoxication are prenatal but not all. I believe the majority are due to pathologic conditions, and we surgeons must determine that pathology. I believe that the surgeon's chief mission is to remove pathologic conditions. The oftener I open an abdomen the less familiar I am with the indications for ileosigmoidostomy or colectomy. Doctors frequently ask me how often I do these operations, and I say, rarely. I believe many a person walks the streets with a peritonitis. It does not give sufficient distress to call the doctor. I have many times seen a driver of a cart come into the German Hospital with an appendiceal abscess and ask for something because he had a little pain, but he had been working just the same. If a man can work with an abscess of that kind the same can be said of a man with a mild grade of peritonitis. After organization of the inflammatory exudate is complete we have bands and membranes, but in the majority of these instances I believe there has been a previous inflammation. The Roentgen ray I think more often misleads the surgeon in connection with the intestinal canal, unless the work is done by a most expert man. I do not operate on Roentgen-ray findings alone. They may influence me to open an abdomen, but if I do not find the lesion I close the abdomen. I think on general principles it is a vicious practice to stitch fast organs which are movable, which too often leaves the last state worse than the first. I have the highest regard for Mr. Lane—all of us who know him love him; he has a charming personality and is a master mechanician; but I do not believe all that he teaches, and I am fearful that his teaching has a bad influence on the younger members of the profession. I would raise my voice with others against too much operating under these conditions. Dr. Janeway, one of the master diagnosticians of the world, was asked to discuss the subject. He said, "Gentlemen, I never made a diagnosis of intestinal auto-intoxication in my life."

Dr. Hugo O. Pantzer, Indianapolis: I would agree with the statement of Dr. Mayo that we may not expect in the life of one individual to be able to divert the racial course pursued through thousands of years, without having economic disturbances to follow in that individual. Constipation, no doubt, is basic to many of the pericolic adhesions found in these cases. The scientific and convincing work of Dr. Hertzler is in pertinent evidence. There is no more potent factor in producing habitual constipation than the misconstruction, by profession and laity alike, of the edict that the bowels shall move daily, to mean that one bowel movement daily is sufficient. There is not an animal, except man, but defecates regularly with every taking of food and several times more daily. It is the inconvenience of complying with this natural demand that has in turn led the human being to formulate the quasi-statutory edict to Nature that she shall move at one set hour daily and no more. Every individual who does not defecate three or more times daily, must in our sense, be regarded as constipated. Once have applied the natural rule to the human family and with one fell stroke you have eliminated the most potent cause of colic stasis! And, also, you have added to each individual life a daily increase of freshness and vigor and endurance, and an increase of years, which will amount to anywhere from 10 to 25 per cent. for each individual. A phase of pericecal pathology commonly not adequately considered is that whenever the appendix is found in retrocecal position there exists not only more or less contraction of the appendix and adjacent ileum, but also a contraction, adhesion and upward displacement of the posterior wall of the cecum. The filling of the cecum under these conditions soon leads to sagging of the entire anterior portion of the cecum. This makes it impossible for the circular muscular fibers to exert themselves normally. The circular muscular fibers which posteriorly are high and fixed, in their anterior portion are often several inches lower, and no longer opposite, and their function is more or less annulled. The fullest release of the postcecal and pericecal adhesions and membranes alone will suffice to give relief here. Commonly such relief is not considered by the average operator. In my estimation, the condition is commonly mistaken for the prolapse of the entire cecum. Where there is one real cecal prolapse of Wilms, there are twenty-five of the anterior wall. None but he who carefully dissects the adhesions and membranes can establish the truth of this observation. This has been my practice for over twenty years, as my case records can establish, and I wish here to state emphatically that I as yet have not found a case in which short-circuiting of the bowel seemed necessary or warrantable.

Dr. Rosalie Slaughter Morton, New York City: It seems to me as a gynecologist that the greatest advance to be made in the next few years will come from a consideration of the pelvic contents in relation to intestinal conditions. Congestion causing dysmenorrhea, which has previously been difficult to treat satisfactorily, has been often due to intestinal stasis and ptosis and to auto-intoxication producing anemia, lowered muscle and nerve tone. Displacements are often caused by pressure of the sigmoid when it has an abnormally long mesentery, and in many cases we find the uterus displaced downward from the constant pressure of the prolapsed cecum or transverse colon. One of the difficulties in diagnosing dysmenorrhea due to congestion is the variability which results from varying conditions of the intestinal contents, and when examined under ether there are no evidences of congestion because the preparation for the anesthetic necessitates the giving of a cathartic and enema which thoroughly evacuates the bowel, producing temporarily a condition which is not the usual one of the patient. In some necropsies we look in vain for the cause of baffling symptoms, because in the moment of death the venous capillaries empty and evidence of congestion disappears. Valuable aid in diagnosis results from the use of bismuth by mouth and in enemas and roentgenograms made every day for a week with the patient in a different position, the patient not remaining in the hospital under abnormal conditions but continuing active in her ordinary occupation. The importance of being able to examine the abdomen thoroughly at the time of a gynecologic operation to see whether there are any intestinal adhesions or angulations, led me to devise a simple instrument, a one-piece abdominal speculum. By introducing the blade through the ordinary low 2 inch incision one can survey the entire abdomen. The handle allows room for the abdominal wall and dressings and keeps the assistant's hand out of the way. By lifting the instrument one can easily find the appendix if it is in its normal position, and if not, by gently turning the wall-lifter, it may be located as high as the hepatic flexure which can easily be seen as well as the gall-bladder. By further turning, the transverse colon, stomach, splenic flexure, descending colon, sigmoid and various portions of the ileum may be inspected easily and without handling. Any lesions of the gall-bladder or constricting bands may be corrected under the present anesthesia, ptosis may be noted for correction, by raising the foot of the bed or other postural treatment during convalescence, thus avoiding complications which often have more effect on efficiency than the gynecologic conditions themselves, as the latter may, in many instances, be considered secondary.

Dr. J. W. Long, Greensboro, N. C.: The pathogenesis of this subject as well as the proper management of these cases may be best understood by remembering the embryology of the alimentary canal. At one time during fetal evolution, most of the intestine, the whole alimentary canal, in fact, is in the enlarged umbilical cord outside of the abdominal cavity. When the colon returns to the abdominal cavity the fetal colon is situated in the left side of the abdomen. As the alimentary tract develops the cecal head is projected, as it were, across the celom, beneath the stomach and liver. Now, while this evolution is going on, there is another important process, namely, fusion and absorption of certain layers of peritoneum taking place. Should fusion of the peritoneum in this region of the abdomen occur too early, the cecum is caught as it rests beneath the liver and we have the high cecum and an undescended colon. This explains those rare cases in which the appendix is found in the kidney fossa above and behind the colon. On the other hand, should fusion fail to take place in whole or in part, the cecum descends below its normal situation in the iliac fossa and may even be found in the pelvis lying on the bladder. As a result of the failure of fusion to anchor the cecum in its normal location we have cecum mobile, dilated cecum, ptosis, thinned walls, infection, and local coloperitonitis, with the formation of pseudoperitoneal cauls of the colon, or Jackson's membrane, Lane's kinks, and intestinal stasis. In other words embrology helps to explain pathology.

DR. FRANK C. YEOMANS, New York: On Feb. 10, 1911, at the New York Polyclinic Hospital I operated on a woman, aged 48, for constipation due to stricture of the descending colon. I found the sigmoid very large, at least 3 inches in diameter and 24 inches long. I united the cecum to the sigmoid by a broad lateral anastomosis thus deliberately performing a cecosigmoidostomy. The patient has been perfectly well since the operation. I reported this case with two others in the *American Journal of Surgery*, January, 1913, with the conclusion that when practicable, that is, when the cecum and the sigmoid can be approximated without undue tension, cecosigmoidostomy (*a*) is a safe operation, easy of execution; (*b*) establishes drainage of the entire colon, there being no blind ends left for collection of feces, fermentation and intoxication, the *bête noire* of ileosigmoidostomy; (*c*) observes the surgical principle of draining the colon at its most dependent points, a principle correct both in theory and in practice; (*d*) anchors and drains the cecum mobile of Wilms; (*e*) anchors and drains chronic volvulus of the sigmoid or a giant sigmoid; (*f*) cures permanently constipation due to mechanical obstruction (obstipation) at any point in the colon from cecum to apex of sigmoid. In THE JOURNAL A.M.A., March 7, 1914, Dr. Eastman in an article entitled, "An Anatomic and Physiologic Method of Short-Circuiting the Colon" advises that "the caput coli be anastomosed freely to the rectum at the lowest point possible without traction." I presume that he had not looked up the literature or failed to notice my earlier article, published fourteen months before, on "Ceco-Sigmoidostomy; an Operation for Short-Circuiting the Colon." Now Dr. Eastman terms this operation caput coli-rectum anastomosis, but Dr. Reed, correctly I think, calls it cecosigmoidostomy. The rectum proper begins opposite the third sacral vertebra. I have measured carefully the various portions of the colon and observed their respective positions in 100 cadavers to determine the proportion of cases in which anastomosis is feasible. I found that, anatomically, the cecum can very seldom be approximated to the rectum proper, hence, cecorectostomy is not practicable. The cecum and sigmoid can be approximated, however, in over 70 per cent. of cases. Of course, the anastomosis is made at the lowest point possible on the sigmoid without undue traction. I wish to draw attention to the fact that caput coli-rectum anastomosis is but an impracticable attempt to do a low cecosigmoidostomy. I described a successful method of performing cecosigmoidostomy one and one-half years ago.

DR. ROBERT T. MORRIS, New York: To think of this subject as a whole we must think at a target. The authors this morning have given us the opportunity. In thinking at a target we must choose a bull's eye fact: the fact that these patients belong to a class which needed to have its ancestry short-circuited by one or two generations. That means that the surgeon is nothing but a therapeutic resource. These cases are medical first, last and all the time, and we are not to think that we are dealing with the class of patients whose trouble is to be ended by the surgeon. The dog through bad habits of his master has arrived at his master's culture. Consequently he has the same stasis, the same arthritides that the rest of us have. We are dealing with about the same diseases in the dog as in man, among those which are frequently colonic in origin. Dr. Eastman spoke of the *bacillus adhesiformis*. This would mean a bacillus in the shape of an adhesion. There is no such bacillus. In many of these cases we see striking results, from operation sometimes, but it is for the good diagnostician to work out the class of case in which the operation of short-circuiting should be performed. For instance, I had a patient with spasmodic asthma who had not lain down for four years. Whenever the colon was flushed the attacks of asthma were very much lessened. On the basis of this reasoning and the facts elicited in the laboratory, I short-circuited the bowel and the patient has not had any spasmodic asthma since.

DR. THOMAS S. CULLEN, Baltimore: In a study of many subperitoneal pedunculated myomata I have been greatly interested in following the behavior of the omentum, in those cases in which it became adherent to the myoma. As the pedicle of the myoma became more attenuated and the blood-supply from the uterus diminished the omentum would gradually make up the deficiency by sending in vessels to the now partially parasitic tumor. The omental fat would gradually disappear until finally the omentum was represented only as a bunch of large vessels which passed from the vicinity of the transverse colon to the tumor. Nearly twenty years ago Dr. Preston, of Hampsted, Md., saw a patient suffering, as he thought, from gall-stones. She went into a state of collapse and he diagnosed rupture of the gall-bladder. The consultant laughed at him and said it could not be so. She recovered, and fifteen years later when I opened the abdomen on account of further gall-bladder symptoms I at once saw six or eight typical gall-stones lying outside the gall-bladder covered by a transparent layer of adhesions. They were as clearly seen as is a glacé nut through the coating of candy. Nature had sealed them over perfectly without leaving any tags of adhesions adherent to surrounding structures. Dr. Marcy speaks of the increased meat-eating in England and the coincident increase of cancer. I recently asked Dr. Hirst of the Severance Hospital, Korea, what was the most common disease in Korea. He said they had more empyemas than anything else. I said "How about appendicitis?" He said "We have had five cases in ten years." They have a large hospital where Dr. O. R. Avison and he are doing the surgery. Every one of these five cases of appendicitis was in a foreigner, so that appendicitis in Korea is a negligible quantity, and as you know, the Koreans have little or no meat to eat.

DR. JEROME M. LYNCH, New York: I hardly ever attend a meeting of any surgical society that some one or two men do not condemn Mr. Lane. If the rule laid down by Mr. Lane is followed there will not be so much occasion to criticize his method. These cases have been treated by physicians and by surgeons and what is the result? The patients have gone to osteopaths, Christian Scientists and a lot of other quacks. If you would short-circuit these cases you would not have the unsatisfactory results that are reported. Every one of ten patients we have so operated on has gained in weight. In a girl 18 years of age with hemorrhagic colitis, there was a gain of 30 pounds. If you put the patient on a meat diet the stool will be liquid when it reaches the cecum. In over 200 experiments we have demonstrated this. If you give a carbohydrate diet it becomes solid. In a great many cases solid feces come from the ileac opening; often the ileum takes on the function of the colon and the feces are thrown into the colon and cannot be removed by flushing or any other means than short-circuiting.

DR. HENRY O. MARCY, Boston: With reference to the Roentgen ray, several of my friends in Boston made a careful study of a large number of normal subjects and found the situation of the intestines in no two cases alike. In one of the hospitals in Boston the surgeons thought they found a stone in the kidney and asked the very distinguished expert to make the roentgenogram. There, perfectly distinct, was the object; round, well defined and in the location of the kidney believed to be the organ discovered. They operated, but no stone was found. When the expert operator was asked to explain the picture he said, "I thought surely you would know that was the button on his drawers." It depends very largely on "the man behind the gun." I recall a discussion some years ago in the Section on Surgery when a Texan said, "Operations for appendicitis are often resorted to when not required. First give sweet oil in large doses" and the young surgeons in the audience showed their disapproval in a very marked manner. He said in closing one thing that is worth remembering—"it will grease the intestines." Then I told this illustrative story: Patrick had a pain in his right side; the doctor told him to go to the hospital and have his appendix removed, and to take a hundred dollars with him, it would cost that. On the way to the hospital he met a friend. "Oh, Pat," said the friend, "them fellows are always wanting to operate; just go to the apothecary and get twenty-five cents worth of castor oil, and I will come in in the morning and see how you are." In the morning, to his friend's inquiry Pat replied, "Jimmie, financially, I am $99.75 ahead, physically I am running behind."

Dr. J. R. Eastman, Indianapolis: I am not the author of the term *Bacillus adhaesiformis* very justly objected to by Dr. Morris. I referred in my paper to a bacillus which I said Dr. Bassler, an associate of Dr. Morris, thus designated. Dr. Yeomans said that for anatomic reasons, it is impossible to anastomose the caput coli and the rectum. That is true under anatomic conditions. We do not operate, however, under normal conditions. The operation is indicated only in severe ptosis and in serious cases of colonic stasis. It requires perhaps a reckless degree of hardihood for me to differ with a man of the experience of Dr. Reed, but I must take issue with him as to one of his statements. I think the internist would grow very excited over his remark that no case of colon stasis of serious character can ever be permanently cured by nonsurgical means. In a certain percentage of cases we can by the use of simple means like exercise and the vegetarian diet with petrolatum to anoint and lubricate the intestine, relieve the colitis, and when the colitis is relieved the pericolitis will likely also be relieved and consequently the stasis is overcome. It is not simply a matter of lubricating the intestine but of correcting the colitis which frequently causes ptosis and stasis and pericolonic adhesions of all kinds. It can hardly be said at this time that every serious case of stasis is a case for surgery.

Dr. Charles L. Bonifield, Cincinnati: I cannot agree with Dr. Deaver that the Roentgen ray is of no account. He must have a poor roentgenoscopist. The German language is of no account to one who cannot read it. The roentgenogram can be depended on by the one who can read it, and if a man makes a series taking about four a day it throws much light on these cases of ptosis. It is particularly valuable in showing how rapidly the small intestine, the cecum and the sigmoid flexure empty themselves. As I remarked before there are degrees of this condition. The cases in which I believe we must operate are those in which the disease has progressed until the large intestine has elongated, and in which its convolutions are scarcely discernible. My old teacher used, in constipation, to prescribe full doses of ergot, and I have found that is a very good drug in the early stages of relaxation of the bowel.

Dr. William J. Mayo, Rochester, Minn.: Surgery of the colon is still in the stage of case-reporting. We have to go through that period. We must be wary of the promoter in surgery as we are of one who tries to sell an oil well. Promoters are as necessary as a drag behind a wagon to keep it from going too fast; but, we must beware of them, because if we accept their teachings, we are going to overdo things. There is something in the question of the large bowel. It may be too long and too big. If we could only say to certain patients that they have too much bowel and that if they continue to live on a meat diet they will not live as long as on a vegetable diet, because Nature has created them vegetable feeders, we might do good if we were sure it were true. If some one would take up the question of our ability to handle various foods much trouble might be avoided. It has been shown that the ordinary man takes two or three times as much meat as he can efficiently care for. Consequently, putrefaction and stasis may occur in the large bowel. Over 60 per cent. of all water we take is absorbed by the large bowel. The danger to all the human family from their inability to absorb all fluids taken is from the development of acid bacteria. The mouth should be alkaline, but when we have an infection in it, the acid-borne bacteria may be carried down from the mouth, and become, possibly, a factor in gastric ulcer and duodenal ulcer. The question is not one of local development but of bacterial infection, the bacteria of chronic and acute conditions going to the liver through the portal circulation.

Dr. C. A. L. Reed, Cincinnati: One of the speakers, a Philadelphia man, said that his opportunity to study this question was generally postoperative. Dr. Deaver also of Philadelphia, has informed us that the last state of these cases was generally worse than the first. The cumulative evidence forces me to conclude that gastro-intestinal surgery in and about Philadelphia must be in a very unsatisfactory state. Let me suggest to those men that they may with profit journey to Cincinnati, where they will find a hospital clinic in which such results are not demonstrable, but in which we will show a primary mortality that is practically nil, with an ultimate functional recovery of better than 85 per cent. Dr. Gibbon alluded to the fact that the profession is very much given to fads. I believe, in a sense, this is true. History, however, will show that every distinct advance in surgical progress has come by virtue of the residuum of truth which has come out of a surgical fad. Therefore, we may look forward with confidence to the ultimate results of this surgery, which is to-day more or less developmental, and as Dr. Mayo said, is yet in the case-reporting stage. Dr. Morris has stated that the rôle of the surgeon is a therapeutic one. If, by this expression, he means helpful or ameliorative, I do not know that any other attitude was ever assumed by the surgeon. He has stated, however, that the condition of these patients is not ended by what the surgeon does. As a sweeping fact, this is a totally unwarranted statement. These patients, many of them, the majority of them, in my hands more than 85 per cent. of them, recover, stay well, and by the results demonstrate the law of cause and effect between the colonic or sigmoidal states, or other intestinal conditions and the general ill health. I do not care one rap about the minutiae of intermediate pathology, although I do not wish to discourage my laboratory friends in their efforts to find out the whole truth and all of its details, however infinitesimal and unimportant. I am afraid Dr. Eastman was just a little inattentive to my exact phraseology. I did not state that intestinal stasis was never relieved except by surgical means. On the contrary, I know that I often relieve it without operative means. What I did say was that, in intestinal redundancy and intestinal ptosis, cure was never secured by other than surgical means. I stand distinctly by that assertion. An elongated, redundant colon and a sigmoid in similar condition were never made less by any medical treatment. An elongated, redundant mesosigmoid was never made shorter except by appropriate surgery. It is impossible. I would just as soon attempt to reduce a dislocated elbow with a dose of Epsom salts as try to overcome one of these conditions I have just described by any sort of medicine.

Obligations of Health.—We are to feel that health is fundamental and inalienable, that it imposes sacred obligations, calls us to willing service, becomes the object of our constant concern, makes us ashamed of inefficiency, stupidity and graft, because they mean disease, raises us to a new level of brotherhood, of citizenship, of sonship to a common Father and of joint parental responsibility to the heritors of a racial stock whose full inheritance consists, not merely of the germ plasm of a fortuitous set of parents, but of all that we jointly bestow upon the generation to which they belong.—Edward T. Devine in the *Survey*.

A STATISTICAL STUDY OF SYPHILIS

THE RELATION OF ITS SYMPTOMS TO SUBSEQUENT TABES DORSALIS OR GENERAL PARALYSIS *

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This study has been prompted by the gradually growing conviction that the men and women who suffer most from recurrent cutaneous syphilis are not those who become tabetics and paretics, and conversely that the victims of tabes dorsalis and general paralysis are not referred to the skin clinic for the treatment of recurrent or persistent late cutaneous syphilis.

With the steady and insistent growth of this feeling the literature has been consulted from time to time, but with disappointingly negative results as to statements based on actual figures, for the authorities on nervous disorders are, as a rule, strangely silent on this phase of the question and the writers on skin diseases do not often concern themselves with the nervous sequelae of the disease. There are, however, a few exceptions to this rule.

Collins[1] says that "it would be interesting and extremely useful to know what proportion of syphilitics develop nervous diseases, but so far no statistics on this subject have been at all convincing."

Jelliffe,[2] in considering so-called parasyphilis, "relies with considerable confidence on a completely negative history of syphilis."

Dercum[3] states that "every physician of experience knows that in parasyphilis the history of the original infection, i. e., the primary lesion, is often difficult to elicit, often denied and often uncertain. Particularly is this true of paresis; it is almost equally true of tabes. Scars of primaries are rare, histories of secondaries commonly wanting. Does this not suggest a possible difference in character of infection. A number of men were syphilized by one woman and all developed paresis (Morel, Lavallée and Bellières); five men all infected by the same glass-blower became tabetic or paretic (Brosius). Nonne, Marie, Bernhard and Erb have related similar experiences. Truly gummatous lesions in paresis are excessively rare."

Nonne[4] believes that the question as to "who will become paralytic or tabetic has not been settled," and that "there is a special genus of spirochete which has especial affinity for the nervous system."

Ravaut[5] remarks that "even in very extensive malignant precocious syphilis the spinal fluid is most often negative."

Jeanselme[6] notes that "in the natives of southeastern Asia where malignant cutaneous syphilis is so prevalent one seldom sees tabes or general paralysis."

Pollitzer's[7] observations extending over many years tend to prove that "the mild cases — those without skin lesions — give us most of our cases of late syphilis of the nervous system."

J. Allen Hoffman[8] draws attention to the frequency in China of primary, secondary and tertiary syphilis and to the extreme infrequency of parasyphilitic conditions, and asks whether syphilis alone is responsible for dementia paralytica or whether other factors such as debauched living or a different oriental strain of spirochete tend to produce parasyphilis.

Finally, Dr. E. D. Bond[9] writes me that in the records of 1,625 necropsies at the Massachusetts State Hospital for the Insane at Danvers he can find mention of only four instances of cutaneous syphilitic lesions and these were all of an early or late secondary character.

From these meager quotations it would seem that the conviction stated at the beginning of this paper was true, namely, that those who suffer most from cutaneous syphilis are spared the fatal nervous consequences of the disease and, conversely, that the victims of syphilis of the brain and cord perhaps unfortunately escape the earlier cutaneous accidents of the malady. Nevertheless, it seemed wiser to base these beliefs on fact rather than on hearsay or the general statements of other writers and so these statistical studies were undertaken.

From Sept. 1, 1904, when the modern record system was established in the outpatient department of the Massachusetts General Hospital, to April 1, 1914, the diagnosis of syphilis has been made in 5,453 individuals, exclusive of 798 cases of tabes dorsalis and 202 examples of general paralysis. The resulting facts enumerated in this paper are based on the study of the first 1,016 cases of syphilis, the last 500 of tabes dorsalis and the first 178 examples of general paralysis. In devoting this rather considerable amount of time to the study of these numerous records it seemed rather a waste of energy to limit oneself to the one mooted point, and so other and perhaps valuable data are recorded in the subjoined tables and statements.

CUTANEOUS SYPHILIS

Sex. — There were 583 males and 433 females recorded, a sex proportion of approximately 4 to 3.

Age of Patients at First Visit.—In the first decade of life there were 4; in the second 71; in the third 390; in the fourth 309; in the fifth 147; in the sixth 52; in the seventh 18, and in the eighth 1. Thus it is seen that between the twentieth and thirty-ninth year of life 699 persons, or nearly 69 per cent. of the whole number first sought relief for their syphilitic infection.

Hereditary Syphilis.—Among these 1,016 patients there were only 24 hereditarily affected.

Age when First Symptoms Developed. — None of these children showed manifestations of their disease at birth. The earliest symptoms were observed in one baby 2 weeks old; one 4 weeks; one 7 weeks; one 2 months; five 3 months; two 4 months; two 5 months; two 7 months; two 1 year; one 4 years, and one each from the tenth to the fourteenth year of life.

STAGE OF THE DISEASE

The primary lesion of syphilis was found in 292 persons; 505 patients presented themselves in the secondary period of the disease and 574 men and women were treated for the late cutaneous symptoms.

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* Read before the Section on Dermatology at the Sixty-Fifth Annual Session of the American Medical Association, Atlantic City, N. J., June, 1914.

* The papers of Drs. White, Hazen and Nichols form a portion of a symposium on syphilis read in the Section on Dermatology. The remainder of the symposium and the discussion will appear next week.

* From the Skin Department of the Massachusetts General Hospital.

[1] Collins: Syphilis and the Nervous System, The Journal A. M. A., Sept. 13, 1913, p. 863.

[2] Jelliffe: Treatment of Nervous and Mental Diseases, White and Jelliffe, Philadelphia, Lea & Febiger, 1913, ii, 304.

[3] Dercum: The Clinical Forms Presented by Nervous Syphilis, New York Med. Jour., Oct. 18, 1913.

[4] Nonne: Eighty-Fifth Congr. German Society of Natural Scientists,

[5] Ravaut: Rev. mens. de méd. int. et de thérap., 1911, iii, 5.

[6] Jeanselme: Bull. Soc. franç. de dermat. et syph., 1913, ii, 129.

[7] Pollitzer: Post-Graduate, August, 1913, p. 729.

[8] Hoffman: China Med. Jour., November, 1913, p. 369, quoted by Reed; Boston Med. and Surg. Jour., 1914, clxx, 572.

[9] Bond: Personal letter.

THE PRIMARY SYMPTOM

As stated above, the initial sore was recorded in only 292 patients, a percentage just under 58 of the persons seen in the primary or secondary stages of the disease. Of this number 239 were in men and 53 in women, a percentage respectively of 47 and 10. These low proportions, extraordinarily meager in the women, rather substantiate my previously formed opinion in this regard. They are in all probability misleading, however, for, as cited above, they include only those primary lesions actually seen and not those possibly hidden away in the urethral, rectal, vaginal or uterine passages. Examinations of these obscure mucous surfaces were not made unless symptoms demanded them. Thus many hard chancres have undoubtedly not been recorded in these computations, but nevertheless, these striking figures decidedly emphasize the fact that we must not depend on the presence of the initial lesion in making our diagnosis of syphilis in hospital ambulants.

Among these 292 chancres there were 27 extragenital, a rather unexpected percentage of 9. They were found on the lips in 19 cases, on the nipple twice, and on the tonsil, tongue, chin, eyebrows, cheek and finger in one instance each.

EARLY SECONDARY SYMPTOMS

It appears to all of us who come in contact with syphilis that there is a primary stage of the disease which is exact and definite in its symptoms when present, but that when this early period is passed then conditions arise irregularly. The typical roseola, mucous plaque and pharyngitis may develop according to precedent, accompanied or not by the less frequent headache, iritis, alopecia and condyloma, or all of these expected phenomena may be omitted and the patient may first be made aware of his infection by malignant precocious lesions of the skin or by some serious nerve involvement. Or again the usual order of events *may* be quite topsy-turvy and we may find mucous plaques, tonsillitis and even a roseola many years after the original infection.

Therefore in the subsequent paragraphs there will be no exact hard-and-fast rules observed in the consideration of the later manifestations of the disease. It must be borne in mind that in many instances the histories of these patients extend over many years and thus carry them at times from the beginning to the end of the disease, and also, in weighing these figures, let us remember that they concern men and women in the approximate proportion of four to three.

Cutaneous Eruption.—This term includes macular, papular and pustular lesions, and these phenomena were observed in 269 males and in 156 females, an approximate ratio of 10 to 9.

Mucous Plaques.—These patches were found in 158 males and in 88 females. Here the disparity of the figures is striking, the proportion being about 7 to 4; but we should perhaps expect this result considering the greater masculine use of tobacco and larger liability to trauma.

Pharyngitis and Tonsillitis.—Of males 107 were affected against 86 females, about 9 to 7.

Iritis.—Important eye symptoms were recorded in 15 men or boys and in 10 women or girls, a ratio of 3 to 2.

Condylomata.—This type of lesion was recorded an almost equal number of times in the two sexes, 22 in males and 19 in females. This relative preponderance in women is to be explained presumably by the presence of the vulva which affords with the anus a second favorable nidus for secondary infection.

Cephalalgia.—Headache was noted in 62 men and in 71 women. This superinvolvement of the feminine meninges (?) in the ratio of practically 6 to 7 is difficult to explain.

Alopecia.—Here the figures are reversed, namely, 34 males and 13 females; nearly 3 to 1. The numbers may not be wholly accurate, for only visible loss of hair was recorded, no systematic effort at epilation being customary in the skin clinic. Again, the relative frequency in the two sexes may be disputed, as a clever woman can partially hide her loss of hair; but on the whole this practice is not so customarily observed in the public clinics as in the private office. Nevertheless, the fact remains that alopecia is not a common phenomenon of syphilis, for in these patients loss of hair was observed in less than 8 per cent. This low percentage is not in accord with popular belief, but it demonstrates graphically my previously conceived conviction.

Leukoderma.—This symptom was recorded in one male and in six females. These figures are conventional. We know that this pigmentary change is a rare symptom and one almost never observed in men.

Pain.—Bone, joint or muscular pain was recorded in 39 men and in 20 females, an apparent proportion of practically two to one. Why this symptom should predominate so largely in the male is not easy of explanation, unless it be that men are more liable to exposure and trauma and take less care of themselves than women.

LATER SYMPTOMS

Papulotubercular Lesions.—These manifestations appeared in 58 males and in 77 females, a proportion relatively and actually greatly preponderant in the latter sex.

Annular and Serpiginous Lesions.—Here again there was a striking dominance in the feminine patients, for this type of eruption was observed in 35 men and in 52 women.

Gummata, Ulcerations, Perforations.—In these destructive manifestations the relative proportion of the sexes was apparently equal, as this type of lesion was observed in 199 males and in 172 females. Nevertheless the actual percentage was again in favor of the women.

Periostitis.—This occurred in 23 males and in 18 females, an actually equal distribution between the sexes.

Leukoplakia.—This showed the well-known distinctive propensity to attack males, only one woman exhibiting this lesion to 13 men.

Other late symptoms appeared in comparatively so few syphilitics that individual deductions would be futile. Dizziness and vertigo were recorded in 11 males and in 11 females; ear symptoms in 8 men and in 9 women; joint affections in 4 men and in 2 women; cerebral signs including hemiplegia and epileptiform convulsions in 6 men and in 2 women, and nerve paralysis in 2 men and in 2 women.

Summarizing, then, these individual sexual propensities of the disease we find that men are more liable to leukoplakia, cerebral symptoms, mucous plaques, alopecia, iritis and pain, while women suffer more from early and late strictly cutaneous lesions, pharyngitis, condylomata and headache.

Coming now to the main argument of this theme, how many of these 1,016 persons, many of them dating their initial infection many years back, developed tabes dorsalis or general paralysis? Only nine, eight men and one woman. The first man was infected eight years previously and had experienced merely mucous plaques. The second had been syphilitic thirty-four years and had exhibited only pustular lesions of the legs and a perforating ulcer of the foot. The third was inoculated twenty years before and had suffered from ulcerative lesions of the chest, elbow and other portions of the body. The fourth had had apparently no skin symptoms; the fifth, a primary lesion followed by mucous plaques, and tabes eleven years afterward; the sixth, an initial sore without any observed subsequent symptoms until tabes appeared twelve years later. The seventh had had a primary lesion eleven years previously followed only by a roseola and an alopecia. The eighth patient, a woman, had given birth to one dead baby and had suffered general arthralgia and gummata of the forehead. The ninth, a man, and the only general paralytic, was infected thirty-four years previously and had observed no cutaneous symptoms.

Surely these are striking figures, for out of this large number, many of whom were old syphilitics, only eight had become tabetic and one paretic, and of this extraordinarily small group only three had experienced any late cutaneous lesions.

SOCIOLOGIC STATISTICS

From a sociologic point of view it might be interesting to insert here the data obtained from the study of these 1,016 case records as to the value of antisyphilitic treatment as obtained in an outpatient department of a metropolitan hospital. These case histories record the treatment and observation of patients varying from one visit to thirty-five years.

The physicians in the skin department of the Massachusetts General Hospital have endeavored as best they could, when confronted with a new syphilitic patient, to tell him that he has a contagious disease and one which demands and requires long and faithful treatment. The patient has been told verbally just what to do and has been given a printed statement of the details of treatment and has been requested to return on a definite day. This has been our method and our aim. Now let us see what has resulted:

No. Patients	Duration of Treatment	No. Patients	Duration of Treatment
209	1 visit	36	6 years
25	1 week	36	7 years
47	2 weeks	24	8 years
18	3 weeks	20	9 years
56	1 month	10	10 years
46	2 months	6	11 years
41	3 months	2	12 years
24	4 months	3	13 years
17	5 months	4	14 years
30	6 months	9	15 years
8	7 months	3	16 years
11	8 months	1	17 years
10	9 months	4	20 years
7	10 months	1	24 years
1	11 months	3	25 years
74	1 year	1	30 years
99	2 years	1	31 years
54	3 years	1	34 years
35	4 years	1	35 years
38	5 years		

Summarizing these figures we find that 20 per cent. of the patients consulted us but once and only 52 per cent. continued the treatment six months or more. On the other hand, 45 per cent. persevered for one year or more and 38 per cent. for two years or more. These are discouraging facts for us to contemplate, but in reality they are even worse than they appear superficially, for in scrutinizing these case records it is apparent that the majority of the patients who returned for treatment after the lapse of their first year consulted us only when there was an active self-evident lesion and stopped medication after the lesion disappeared. In other words, only a fraction of a half of those syphilized received what the world deems sufficient regular systematic treatment.

What can be done to remedy this evil of the past? The future appears to hold forth a brighter prospect. The vastly increased knowledge among the laity of the possible evils subsequent to the disease, the undoubtedly greater early curative and sterilizing effect of salvarsan and the very valuable "follow-up" work of our present social workers should mean much to eliminate, in the days to come, such a condition of insufficient treatment.

TABES DORSALIS

Five hundred records were studied, those of 427 males and of 73 females, a ratio of nearly 6 to 1.

AGE AT TIME OF DIAGNOSIS

In the third decade of life, that is, between the ages of 20 and 29 inclusive, there were 26 cases; in the fourth 169; in the fifth 213; in the sixth 66; in the seventh 25, and in the eighth 1. In other words between the ages of 30 and 49 we may first expect to make a diagnosis of tabes in 76 per cent. of our cases. In this series the youngest male was 21 years old and dated infection apparently only three months back. The youngest female was 26 and no history of previous syphilis was obtained. The oldest male was 72, and his primary lesion was acquired thirty-eight years previously. The oldest female was 61, and she had suffered from palmar eruptions at various times for twenty years.

INTERIM BETWEEN SYPHILITIC INFECTION AND FIRST SYMPTOMS OF TABES

Syphilis was acknowledged or recorded by the hospital in 226 patients, or 45 per cent. of the cases, and the intervals between the earliest signs of syphilis and of tabes were as follows:

Time Years	No. Patients	Time Years	No. Patients
¼	1	19	6
1	1	20	16
2	4	21	2
3	1	22	4
4	9	23	4
5	10	24	2
6	7	25	9
7	7	26	4
8	13	27	2
9	9	28	1
10	27	30	3
11	11	32	1
12	15	37	1
13	12	38	2
14	9	39	1
15	9	40	2
16	6		
17	7		226
18	8		

Grouping these figures we find that 11 per cent. of the cases developed within the first five years, 25 per cent. within the first ten, and 61 per cent. within the first fifteen.

PREVIOUS OR EXISTING SYMPTOMS OF SYPHILIS

Eighty-four persons "denied venereal"; 141 acknowledged or were seen with primary lesions; 39 patients or wives of patients had experienced miscarriages, and of the late lesions 2 were scaling palms, 3 were late mucous patches, 1 was deafness, 1 was myocarditis, 7 were gummata, 2 were perforated septa nasi, and four were periostitis.

Referring again to the main argument of our theme we find that out of 500 tabetics only 18, or somewhat more than 3 per cent. had ever exhibited any late cutaneous lesions of syphilis, an almost negligible number.

Incidentally, it was found that 2 persons had developed Raynaud's disease, while 17 had suffered from perforating ulcer of the foot. As for the use of alcohol, 24 were total abstainers, 43 were moderate drinkers and 60 admitted excessive indulgence in liquor.

FIRST SYMPTOMS OF TABES

The initial sign of the disease was recorded in 284 patients. Of all symptoms pain was the most frequently referred to, being present in 130 men and women; whereas regionally the part of the body first affected was the legs, which were first attacked in 176 individuals, or 62 per cent.

The details of these data were as follows:

1. Legs	Pain	99	176
	Numbness	38	
	Ataxia	21	
	Weakness	17	
	Stiffness	1	
2. Eyes			35
3. Stomach	Pain	11	19
	Vomiting	4	
	Indigestion	2	
	Distress	1	
	Hot flashes	1	
4. Head	Pain	9	17
	Paresthesia	4	
	Vertigo	3	
	Numbness	1	
5. Bladder			14
6. Back and sides.	Pain Hyperhidrosis		7
7. Hands (numbness)			4
8. Feet (perforating ulcer)			4
9. Chest (numbness and pain)			3
10. Rectum (pain)			2
11. Mind (nervousness)			1

GENERAL PARALYSIS

The histories of 178 instances of the disease were studied, for at the time this investigation was completed this constituted the total number recorded in our outpatient department. There were 162 males and 16 females, a ratio of 10 to 1, an even greater masculine predominance than that observed in the case of tabes. Another and even more striking phenomenon was the racial incidence of the disease. Our outpatient clientèle approximates 50 per cent. foreign-born — these being largely Russian Jews, Italians and eastern Europeans, and yet in our figures general paralysis was found in only nine persons who did not hail from the British Isles or descend from still earlier British emigrants. These notable exceptions were four French Canadians, two Germans and one Italian, one Swede and one Russian Jew.

AGE AT TIME OF DIAGNOSIS

Syphilis was acknowledged or recorded in 55 of these patients, including 2 congenital cases, and the intervals between the first signs of syphilis and of general paralysis were the following:

Interval Years	No. Patients	Interval Years	No. Patients
1	2	15	3
2	1	16	1
3	1	17	2
4	3	18	3
5	3	20	7
6	1	21	1
8	6	22	1
9	3	23	2
10	3	24	2
11	2	25	1
12	2	30	1
14	2		
			53

PREVIOUS OR EXISTING SYMPTOMS OF SYPHILIS

Forty-nine individuals "denied venereal"; 53 acknowledged or were seen with primary lesions, 3 patients or their wives had had miscarriages, while only three patients had suffered from late symptoms, one with deafness, one with gumma and one with perforation of the septum nasi.

Recurring once more to the principal theme of this investigation we find that only two patients out of 178 had experienced any late cutaneous sequelae of syphilis — the extraordinarily low percentage of 1 and a small fraction.

As to the previous use or abuse of alcohol there were 7 total abstainers, 16 moderate indulgers and 17 hard drinkers.

FIRST SYMPTOMS OF GENERAL PARALYSIS

The first symptoms of the disease were recorded in 146 persons. Mental deterioration was the most frequent early sign, and pain came second in order.

The details of these data were the following:

1. Head symptoms: nervousness in 20; paralysis in 12; vertigo in 9; headaches in 5; convulsions in 3; eye symptoms in 3; ear signs in 1; changed mentality in the form of altered character in 16; loss of memory in 12; defective speech in 2; faulty handwriting in 2, and melancholia in 1.

2. Cord symptoms: legs, numbness in 13; staggering gait in 9; pain in 11; weakness in 5; cramps and stiffness in 2. Pain in abdomen, elbow, chest and neck in 5.

3. Scattering: weakness and tremors in 5; asthesia in 3; bladder trouble in 3; syncope in 2; hyperhidrosis in 1, and tingling of fingers in 1.

SUMMARY

As a result of the study of these 1,694 case records we make the following deductions:

1. Of our syphilitics, 69 per cent. were infected between the twentieth and fortieth year of age.

2. Hereditary syphilis does not tend to show itself cutaneously at birth.

3. Initial lesions were recorded in only 58 per cent. of our primary or secondary cases, and of these, 9 per cent. were extragenital.

4. The clinical symptoms of syphilis vary much in individuals.

5. Men are more liable to leukoplakia, cerebral symptoms, mucous plaques, alopecia, iritis, and pain,

while women are more prone to early and late skin manifestations, pharyngitis, condylomata and headache.

6. Of these 1,016 recent and old syphilitic persons, only 8 had developed tabes, 7 men and 1 woman, and only 1 had become paretic, and of these 9 parasyphilitics just 3, or less than 0.3 per cent., had exhibited any late cutaneous lesions.

7. Of these patients, 20 per cent. made but one visit, 52 per cent. continued their treatment during six months, 45 per cent. during 1 year and 38 per cent. during two years or more.

8. Tabes dorsalis attacks men and women in the ratio of 6 to 1.

9. Tabes appears between the thirtieth and fiftieth years of life in 76 per cent. of the cases. The youngest tabetic was 21.

10. In 45 per cent. of the tabetics syphilis was acknowledged or found actively present (Wassermann test not included).

11. Tabes developed in 11 per cent. within five years from the date of the primary infection and 61 per cent. within fifteen years.

12. Of these 500 tabetics only about 3 per cent. had ever manifested any late cutaneous syphilids.

13. Pain was the most frequent early symptom of tabes and the legs were the first part of the body to evince the disease.

14. General paralysis occurred in men and women in the ratio of 10 to 1.

15. Although dealing with a class of patients approximately equal numerically as to native and foreign birth, 94 per cent. of these paretics were descendants of or more recently emigrants from the British Isles.

16. Paresis arises in 70 per cent. between the thirtieth and fiftieth years of life, but the youngest paretic was 16 and the oldest 76.

17. In 30 per cent. of the paretics syphilis was acknowledged or had been treated in our hospital (Wassermann not included).

18. The lapse of time between the original syphilitic infection and the first paretic symptoms was distributed more or less equally numerically from one to thirty years.

19. Of these 178 paretics merely 1 per cent. and a fraction had ever suffered from late cutaneous syphilis.

20. Numerically speaking, the brain was the first part of the paretic to give way and the cord came next.

21. Thus my original convictions, based on clinical experiences, have been proved to rest on very solid foundations of fact.

259 Marlborough Street.

Law Enforcement.—In our zeal for regulating everything by law we forget that laws are not automatic, and do not enforce themselves, and that even good motives in the best of officials do not insure good deeds. We forget that government with law and order does not exist primarily in the hands of public officials, but rather in the minds and hearts of "we, the people," who, in both the first and last analysis, are the government.—W. F. King, M.D. in *Jour. Indiana State Med. Assn.*

SYPHILIS IN THE AMERICAN NEGRO*

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The subject of syphilis in the negro is one which has never been thoroughly studied and concerning which there are still many disputes, caused largely by prejudice and broad statements and the lack of careful investigation. Statistics on diseases in the negro are very meager, and on the subject of syphilis are almost entirely lacking. The rule has been to publish personal opinions, often totally unaccompanied by evidence of any kind.

At the start it should be pointed out that there are two distinct classes of negroes, just as there are two classes of every other race, and that the same rules cannot possibly apply to both classes. In the one class we have the colored people who are trying to make something of themselves, who have become responsible physicians, lawyers, teachers and business men, and who live a life not materially different from the same type of whites. In a considerable experience with these men I am convinced that syphilis is not more prevalent among them than among the whites, although there are no statistics to prove the point.

On the other hand, there is a poorer class of negroes, the class of those who frequent the hospitals and dispensaries, and it is with negroes of this class this paper is concerned. While slaves they were valuable property, and as such were well cared for by their owners, just as good horses were cared for. When slavery was abolished, however, these people were free to live as they liked; they were unacquainted with the ways of self- and race-preservation, and as they became a political force nearly all white hands were turned against their advancement, since that seemed to be a prelude to political power. Then whisky and cocain levied their tolls on the race; they were forced to share in the general post-bellum poverty of the South, and as a result of all these conditions the majority were forced to live in the most wretched habitations, often many to a room. Even to-day their lot is none too good; as a rule, they are compelled to dwell under conditions that can breed neither good morals nor good health.

The negro springs from a southern race, and as such his sexual appetite is strong; all of his environments stimulate this appetite, and as a general rule his emotional type of religion certainly does not decrease it. Both Quillian[1] and Murrell[2] state that they have never examined a negro girl over 16 years of age who was a virgin, and the leading negro physicians of Washington admit that virginity is very rare among the poorer members of their race. In fact, virginity is as rare among this class of negresses as continence is among white men. The health reports of the District of Columbia for the ten years ending 1903 show that during this period there were 27,893 legitimate and 907 illegitimate births among the whites, and 13,909 legitimate and 4,786 illegitimate births among the colored. During this time practically one-third of the population was negro. Of course, many illegitimate births among the whites were doubtless concealed, and Washington has not a large number of the poor class of whites; hence these figures are not altogether fair to the blacks, but they do serve to show how many births in that race are out of wedlock. It should be stated, however, that some of the European cities have just as high a ratio of illegitimate births as the colored population of Washington.

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* Read before the Section on Dermatology at the Sixty-Fifth Annual Session of the American Medical Association, Atlantic City, N. J., June, 1914.

[1] Quillian: Med. Era, St. Louis, 1911, xx, 416; Am. Jour. Dermat. and Genito-Urin., 1906, x, 277.

[2] Murrell: Med. Progress, 1911, xxvii, 176; Syphilis and the American Negro, The Journal A. M. A., March 12, 1910, p. 846.

In 1907 Howard Fox[3] read an excellent paper on "Observations on Skin Diseases in the Negro," and his general statement "that syphilis in the negro is not only very prevalent, but more so than in the white, is one point on which the majority of writers, my correspondents and statistics agree," seems pretty generally accepted to-day. Fox collected statistics of 2,200 cases of skin-disease among negroes and an equal number among whites, and found that among the former there were 596 cases of syphilis as opposed to 279 cases in the latter. Going still further, Fox collected statistics of 15,000 cases of general disease among whites and 32,000 among blacks, and found that 3.96 per cent. of the former applied for treatment because of syphilis, and 5.82 per cent. of the latter for the same malady. Fox concludes: "To be exact, the blacks suffered 1.46 times as often as the whites." Similar views are concurred in by Hyde,[4] Morison,[5] Dyer,[6] Matas,[7] Quillian, Murrell, Corson[8] and McHutton.[9]

I have endeavored to ascertain the frequency with which syphilis occurs among the negroes of Washington, and my results have been substantially the same as those of Fox. In 2,000 cases of skin-disease personally observed, there were 440 cases of syphilis. Dr. Warfield, superintendent of Freedmen's Hospital, has personally tabulated all cases of syphilis in the large service of that hospital from 1901 to 1912. It is worth noting that practically all diagnoses were made by the white attending staff, and not by colored physicians. The results were as follows:

Total admissions	32,181	
White patients	2,160	
Negro patients	30,021	
Total admissions for syphilis	974	
White admissions for syphilis	92	or 4.35 per cent.
Negro admissions for syphilis	881	or 2.26 per cent.
Total dispensary patients	61,518	
White patients	1,367	
Negro patients	60,151	
White syphilitic patients	180	or 13.16 per cent.
Negro syphilitic patients	3,939	or 6.54 per cent.
Total negro patients	90,172	
Negro syphilitic patients	4,913	or 5.37 per cent.

It is rather difficult to explain the large number of white patients visiting this hospital to be treated for syphilis, except on the well-known ground that many white syphilitics prefer to be treated by negro physicians, probably being ashamed to call on men of their own color. Among the whites of Washington, Freedmen's Hospital is generally believed to be a strictly negro institution.

In a study of syphilis published by the Committee on Social Betterment,[10] it was found that in the hospitals of Washington 3.46 per cent. of all patients applied for treatment because of syphilitic infection, and in some recent work which I have done along the same line it seems assured that the figures for whites are only a trifle lower.

As a result of these different studies it would seem certain that more negroes than whites are treated for syphilis, and that the negro probably suffers about one and one-half times as frequently as the white.

To my mind one of the most serious facts in connection with the prevalence of syphilis among negroes is the amount that occurs in schoolchildren. While I determined the average age of infection in 500 consecutive cases to be 21 years, still in the series of 440 already mentioned there were no fewer than nine cases of acquired syphilis among schoolchildren, one of whom was 19 years old, and all of the remainder under 15. According to the infected children, and also the parents of several of them, there exist in certain of the graded schools "social clubs" composed of from four to twelve members whose sole object is sexual indulgence, as I have already reported.[11]

Of course, syphilis is by no means nuknown among white school-children, and the morals of many of them are most deplorable, but so far as I can learn acquired syphilis among them is very much rarer than among negro children. Pollack[12] has written an excellent paper on venereal diseases in the very young, and has shown that in certain instances this can be explained by the superstition that if an infected individual will touch the genitalia of a person of the opposite sex who has never known sexual congress, the disease will spontaneously disappear.

In dealing with the late results of syphilis it is still more difficult to gather reliable statistics, but the experience at the Johns Hopkins Hospital and at the Freedmen's Hospital would seem to show that aneurysm and aortic insufficiency due to syphilis are commoner among negroes than among whites. Paresis is about equally common in the two races, while tabes is distinctly less common among the colored, although, as Hecht[13] has pointed out, much commoner than has been supposed. Other types of syphilitic nervous lesions, according to Fox, are more common in the negroes.

The cutaneous manifestations of syphilis in the two races vary considerably, as the following statistics gathered by myself will show. These figures were derived from a personal study of 2,000 consecutive cases of skin-disease in the negro, and an equal number in the white race.

	Whites	Blacks
Chancre	2	12
Extragenital chancre	12	1
Macular	18	10
Maculopapular	8	4
Annular	..	43
Pustular	4	12
Secondary	22	68
Gumma	14	80
Nodular	20	19
Palmar	12	3
Tertiary	12	39
Hereditary	10	42

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[3] Fox: Jour. Cutan. Dis., 1908, xxvi, 67, 109.

[4] Hyde: Morrow's System of Genito-Urinary Diseases, Syphilology and Dermatology, New York, 1893, ii, 18.

[5] Morison: Tr. Am. Dermat. Assn., 1888, xii, 29.

[6] Dyer: South. Med. Jour., 1913, vi, 10.

[7] Matas: Tr. Am. Surg. Assn., 1896, xiv, 483.

[8] Corson: Am. Jour. Dermat. and Genito-Urin., 1906, x, 240.

[9] McHutton: Am. Jour. Dermat. and Genito-Urin., 1906, x, 6.

[10] Kober: Rep. Com. on Social Betterment, President's Homes Commission, Washington, D. C., 1908, p. 137.

[11] Hazen: Washington Med. Ann., 1913, xii, 223.

[12] Pollack: Bull. Johns Hopkins Hosp., 1909, xx, 142.

[13] Hecht: Am. Jour. Med. Sc., 1903, cxxxvi, 705.

Curiously enough, extragenital chancres among negroes are extremely rare. I have seen but one case, and most of my confrères who have had a considerable experience with the race have seen none.

Macular syphilids are not common either in the pure-blood negroes or in mulattoes, but when present can usually be seen easily; hence it can hardly be assumed that the natural pigment hides the eruption, although such a thing is perfectly possible. Papular syphilids are the common variety; in fact, all skin-diseases in negroes have a tendency to be more papular than in the whites. While the ordinary types of papular eruption are the ones usually encountered, still there are five varieties seen among negroes much more commonly than in other races. The first is the follicular variety, in which the lesions are very small, and situated at the hair follicles; the second is the annular kind, already carefully studied by both Fox[14] and myself[15]; the third is the frambesiform, in which there are large vegetating lesions somewhat resembling those of yaws; the fourth is the large semiglobular papule with a diameter of 1 cm. or more, and the fifth is the papulosquamous, which may look like psoriasis. Pustular or papulopustular lesions are fairly commonly seen as the first cutaneous manifestation of the infection. Condylomata are more common than among whites. It is not at all unusual to encounter cases in which there is a fresh infection but no cutaneous eruption.

Relatively speaking, tertiary manifestations are but little more prevalent than among whites: gummata are commoner, but nodular lesions are rarer. Typical cases of intractable palmar syphilids are indeed rarities.

Mucous patches are probably commoner than among whites, and alopecia in the two races has about the same incidence; but glandular enlargement is much more constant in the colored. It must be borne in mind, however, that glandular enlargement is present in almost all negroes, whether syphilitic or not; hence one dares not put too much stress on palpable glands. Gummata of the sternoclavicular articulation and also of the testicle are very common among negroes.

I cannot agree with the usual statement that the lesions of syphilis are less severe in the negro; I can see no difference in the course of the disease in the two races, either with respect to the clinical symptoms or to the Wassermann reaction. Certain of the cases of papular syphilis are very intractable to treatment; it sometimes requires months of steady treatment to wipe out the lesions. As regards treatment, it is somewhat surprising to find that negroes attend the clinics as regularly as they do: they attend just as faithfully as do white patients, and the magic words "blood-test" have much influence over them. Usually they are very docile patients: while they complain of the pain of intramuscular injections, they will come back for more, though they cannot be depended on to carry out the inunction treatment. The secret of treating them is to show them that you are taking an interest in them, and also that you mean just what you say.

The prophylaxis of syphilis in the negro race is especially difficult, for it is impossible to persuade the poor variety of negro that sexual gratification is wrong, even when he is in the actively infectious stage. It is probable that sex hygiene lectures will not have the slightest effect on this type, especially when one considers the risks that many of our own medical students run. As regards personal prophylaxis, all male babies should be circumcised, both for the purpose of avoiding local irritation which will increase the sexual appetite and for preventing infection. It is questionable whether adult negroes should not be taught the use of prophylactic packages, which appear to have worked much good in certain quarters.

The home problem must be studied, overcrowding prevented and opportunities furnished to live in decent dwellings. The passage and enforcement of a strict curfew law might do much good. The cocain and alcohol problems are also urgent, for indulgence in either of these drugs usually stimulates sexual desire and renders the victim careless as to the means of gratification. Doubtless most cases of rape result from the effects of one or the other of these substances. Syphilis should certainly be made a reportable disease, if only for statistical purposes. Parents who bring syphilitic children into the world should be forced to provide competent medical attention; there should be some law by which this could be brought about. Young children with syphilis will usually not attend a clinic, and there should be some way in which they could be forced to do so, possibly through the aid of the juvenile court or the Board of Children's Guardians.

It is probably in the hospitals, however, that the greatest good can be done, and this by shortening the period of infectivity as much as possible. The way that syphilis is treated in the average ward or outpatient department is a disgrace. Many physicians feel that they do not care to bother with the treatment of this infection, and so leave the work to the interns, and many other physicians are profoundly ignorant of the immense amount of detail work required for the proper treatment of syphilis. The old method of prescribing a few pills is, and should be, a thing of the past. We must now work with our serum reactions and injections of salvarsan and mercury, avoiding the injury that may come from overdosage, while taking care to give a sufficiency. If a factory turned out goods in the slipshod way that the average hospital hands out syphilitic medication, it would soon go to the wall. In the hospital wards there is the greatest need for several things. In the first place, more beds for venereal cases are urgently needed; these should be in a general hospital, not in a special hospital, for patients would decline to go there because of the stigma attached to such an institution. There should be one man to direct the treatment of all syphilitic cases; there should always be salvarsan on hand; every hospital should make a provision for competent Wassermann work (which certainly is not the case at present, some hospitals refusing to admit they ever receive syphilitic cases), and lastly, there should be better cooperation between the department of syphilis and the other departments. All syphilitic patients leaving the hospital should be referred to the syphilitic clinic for general treatment.

As regards the dispensary service, the same general rules hold as for the hospital. Clinics should be conveniently located, the attendance should be regular and there should be proper facilities for work. Every dispensary should have a corps of visiting nurses, so that patients can be followed in their homes and instructed in prevention, in addition to being persuaded to return for treatment.

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[14] Fox: Arch. f. Dermat. u. Syph., 1912, cxiii, 315; A Case of Annular Papular Syphilis in a Negress, THE JOURNAL A. M. A., May 10, 1913, p. 1420.

[15] Hazen: Jour. Cutan. Dis., 1913, xxi, 148.

The special hospitals, as the eye and ear hospitals, deserve especial censure, as they make no provision for the general treatment of syphilis. Each hospital should have a special department where this general treatment can be satisfactorily administered under the care of a man skilled in this line of work, for patients cannot be expected to attend two different hospitals, one for a local condition, and one for general infection with syphilis.

The Rochambeau.

OBSERVATIONS ON THE PATHOLOGY OF SYPHILIS *

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It is hardly necessary to say that a knowledge of the real pathology of syphilis would be of great assistance in the practical handling of the disease. Our attempts to treat syphilitics would be more successful if we knew more about what is actually going on in the body, more about where and why the spirochetes localize and more about the mechanism of relapse. At present our knowledge on these and other points is in the making. What has passed for many years as the pathology of syphilis is really only a small part of the subject, namely, pathologic anatomy. This branch has been unusually barren of helpful suggestions, and such interpretations as have been made have necessarily not been convincing. It is only since the recent development of the pathologic physiology or experimental pathology of the subject that we are beginning really to understand something of the pathogenesis of the disease and to profit by this knowledge. In this paper I desire to outline several of the newer theories of syphilis which seem to have enough evidence in their favor to warrant discussion.

I. EARLY LOCALIZATION OF THE SPIROCHETES

The first proposition is that the spirochetes take their final position during the period of the secondary septicemia and that the future course of the disease is determined by this early localization. In other words, syphilis is not to be thought of as a chronic septicemia extending over years, but rather as a complex of local infections which date back to an early septicemia. This theory is illuminating and has practical bearings. As far as I know it cannot be attributed to any one observer. It seems to have developed independently and almost unconsciously among many observers, and evidence in its favor has come from several different sources. The first suggestion came to me from the demonstration that the nervous system may be invaded in the primary and secondary stages. Changes in the spinal fluid indicating early infection are now well known, and the spirochetes have been demonstrated in the spinal fluid of secondary cases by inoculation of the monkey by Hoffman,[1] and by inoculation of the rabbit by Dr. Hough and myself[2] and by Uhlenhuth and Mulzer.[3] From these accepted facts it is but a step to imagine that these patients are the ones who later suffer from syphilis of the nervous system. This is partly a step in the dark, but we are at least sure that the foundations of later lesions *can* be laid down early in the disease.

Additional support of this theory has been given by the systematic work of Uhlenhuth and Mulzer on inoculations of the rabbit's testicle with blood from different stages of the disease. These authors[3] have shown that, in the primary and secondary stages, 80 per cent. of a large series of cases give positive results for spirochetes, while in the latent stage no positive results at all have been obtained. This negative evidence also suggests, although of course it does not absolutely prove, that the spirochetes do not circulate after the first septicemia. It seems more probable that they localize early and then produce lesions *in situ.* The alternative of this theory has been stated by Noguchi[4] as a process of sensitization of the brain, for example, by a long systematic infection until the brain is susceptible to a passing infection. The weight of evidence, however, is in favor of the other theory, because we know that the spirochetes can localize early in the disease and it has not been proved that they circulate in the blood to any extent during the later stages.

II. SPECIAL LOCALIZING POWERS OF CERTAIN STRAINS OF SPIROCHETES

With this idea as a background, the affinities or localizing powers of the spirochetes assume great importance. If we consider the spirochetes as a whole we secure an instructive side-light on the subject. In *Spirochaeta dentium*, we have an organism which lives only a saphrophytic existence in the mouth or at best multiplies excessively in local lesions produced by other causes. *S. schaudinni*, on the other hand, is apparently able to produce an ulcer in the skin, but does not metastasize. Again, the spirochetes of relapsing fever produce no skin-lesions, but live in the bloodstream. An advance in localizing power is seen in *S. pertenuis*, the cause of yaws. This organism produces a local skin lesion which may be followed by a septicemia, but the organisms seem invariably to return to the cutaneous tissues and to localize there. It should be said that yaws has not been studied so intensively as syphilis in regard to localization; but lesions of the brain and internal organs have never been demonstrated and the disease is not hereditary. Coming to *S. pallida* itself, we have an organism which produces a local skin lesion, then a general septicemia and finally local lesions in practically any part of the body.

While *S. pallida* can produce lesions almost anywhere, in a given case we usually find a definite localization in the lesions and not a diffuse process. Thus we may find lesions only of the skin, or only of the nervous system, etc. Fournier[5] has tabulated 4,400 cases of this kind; 40 per cent. were lesions of the nervous system, 11 per cent. of the reproductive organs, 11 per cent. of the bones, and 0.3 per cent. of the arteries, etc. This series of cases must have been a selected one, in some respects, because recent work has shown that the localization in the heart and arteries must be higher; but Fournier's tabulation shows possible results of diversity in early localization.

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* Read before the Section on Dermatology at the Sixty-Fifth Annual Session of the American Medical Association, Atlantic City, N. J., June, 1914.

[1] *Hoffman:* Dermat. Ztschr., 1906, xiii, 561.

[2] *Nichols, H. J., and Hough, W. H.:* Demonstration of Spirochaeta Pallida in the Cerebrospinal Fluid, The Journal A. M. A., Jan. 11, 1913, p. 108.

[3] *Uhlenhuth and Mulzer:* Berl. klin. Wchnschr., *1913, L,* 2033.

[4] *Noguchi:* München. med. Wchnschr., *1913, p.* 2484.

[5] *Fournier:* Prophylaxis of Syphilis, translated by Marshall, New York, Rebman Company, *1906, p. 139.*

It seems reasonable that all strains are able to infect several organs indifferently. Thus it has been shown experimentally by Neisser[6] and by Uhlenhuth and Mulzer[3] that in the monkey and rabbit the liver, spleen, bone-marrow and testicle are most infectious. The same is probably true for man. In addition we must recognize the probability that certain strains, besides infecting these organs, have a special power of infecting other tissues. The skin and the nervous system may be mentioned as extremes.

It can be stated with certainty that different strains of *S. pallida* produce different kinds of lesions in the rabbit. I have worked altogether with ten strains from different sources, and certain of these strains have well-marked characteristics which enable one to pick them out without other information. The lesions may be classified in general as either large, loose, edematous ones, or small, hard cartilaginous-like ones. Granted that differences in strains exist, the important question is, Are these temporary varieties which may occur in one infection or are they permanent strains for a number of infections? Working with a large number of transfers in many animals I have found that these differences hold good, and from this evidence the strains appear to be more or less permanent. In addition to the differences in the lesion, Noguchi[7] has called attention to differences in morphology of the spirochetes, such as thick, thin and medium forms and also to a correlation between morphology and character of lesion. Have these facts any bearing on the question of localizing powers? It seems very probable that these apparently distinct and permanent strains of *S. pallida* differ in their localizing power.

The way to settle this question of strains would seem to be to isolate strains from different sources and to carry them on long enough in rabbits to determine their characters. I have recently reported[8] on a strain isolated from the nervous system which possesses distinctive characters in the rabbit. The local lesions are extremely hard with a necrotic center; more particularly, this strain tends to generalize with production of lesions in the eye and eyebrows. No other strain has shown this property. I suggest that the nervous system may be less readily infected than other organs, and that the invasive power of this strain may be significant in infection of the nervous system.

Practically, as is well known, the early localization in the nervous system can be determined with certainty by examination of the spinal fluid; and if ordinary measures of treatment are not sufficient to control the infection, it can be treated locally.

III. LOCALIZATION OF SPIROCHETES IN THE TESTICLE

There is one other localization which merits special consideration, namely, infection of the reproductive organs. Just as the affections of the nervous system are of supreme importance for the individual, so infections of the reproductive organs are of supreme importance to the race. According to the views here outlined, the reproductive organs, especially the testicle, if infected at all, must be infected early and must remain infected for many years. If this is so, it should be possible to detect the infection by examination of the spermatic fluid. Spirochetes have been demonstrated in the spermatic fluid by inoculation twice, once by Finger and Landsteiner,[9] using a monkey, and once by Uhlenhuth and Mulzer,[10] using the rabbit. Both cases were in the secondary stage. I have recently succeeded in finding typical *S. pallida,* with the dark-field illumination, in the apparently normal prostatic fluid of a secondary case. The exact source of the organism in this case is naturally in doubt, but it must be in the reproductive system. A more important finding would be the demonstration of the organism in the seminal fluid during the latent stage, for example, in a candidate for marriage. I have made two unsuccessful series of inoculations from cases in the secondary stage and one from a case in the latent stage. Inoculation from one other case in the latent stage, a candidate for marriage, resulted in the development, after forty-five days, of a definite hard nodule, but no spirochetes could be demonstrated by fresh examinations, smears or sections. To my mind this lesion was syphilitic and compares with similar nodules produced by the inoculations of paretic brains in which I was unable to demonstrate spirochetes,[11] although the virus was undoubtedly present. Experimentally, there is no difficulty in showing the affinity of *S. pallida* for the sexual organs as has been mentioned. In my experience intravenous injections of the rabbit with suspensions of spirochetes from any source result always in lesions of the scrotum and testicle, and sometimes only in these.

Practically, determination of infection of the reproductive organs by local examination is not so important as examination of the spinal fluid for local infection, because by the Wassermann test, the provocative Wassermann test or luetin reaction we can almost always find an indication of infection exclusive of the nervous system, if such exists, and experience has shown that the testicle rarely escapes. But the subject deserves further work, because if it could be shown that the testicle has escaped infection, marriage might be permissible even if other parts of the body were infected.

IV. THE INHIBITING EFFECT OF ONE LOCAL LESION ON THE DEVELOPMENT OF LESIONS ELSEWHERE

According to these views, the character of the spirochetes is of more importance than the resistance of the body, and eventually determines the picture of the disease. On the other hand, one factor in the host must not be neglected. This is the inhibiting effect of one active lesion. This effect is well known as far as the body as a whole is concerned, and has been experimentally demonstrated on monkeys and paretics — namely, that an animal or man once and still infected will not develop lesions on reinfection. I believe the same holds true within the body — namely, that lesions in one organ tend to inhibit the development of lesions elsewhere. I have been able to prove this proposition experimentally in rabbits.[12] If a rabbit is infected in one testicle, the spirochetes develop a local lesion, but they also invade the circulation and localize elsewhere, especially in the other testicle. No lesion develops, however, in the second testicle while the lesion in the first testicle is active. If the first testicle with its lesion is excised, a lesion promptly appears in the second testicle.

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[6] Neisser, A.: Pathologie und Therapie der Syphilis, Berlin, Julius Springer, 1911, p. 97.

[7] Noguchi: Jour. Exper. Med., 1912, xv, 201.

[8] Nichols: Jour. Exper. Med., 1914, xix, 362.

[9] Finger und Landsteiner, referred to by Neisser (Footnote 6).

[10] Uhlenhuth and Mulzer: Arb. a. d. k. Gsndhtsamte., 1913, xliv, No. 3.

[11] Nichols, H. J., and Hough, W. H.: Positive Results Following the Inoculation of the Rabbit with Paretic Brain Substance, THE JOURNAL A. M. A., July 12, 1913, p. 120.

These experimental findings have a bearing on the human pathology of syphilis. They give a clue to the explanation of nervous relapse after inadequate treatment with salvarsan. Given a secondary case with invasion of the nervous system, as long as the skin lesions are active, symptoms rarely occur in the nervous system; but if the skin lesions are suddenly healed up with salvarsan and yet the spirochetes in the nervous system are not all destroyed, the inhibiting effect of the skin lesions is lost and a lesion flares up in the nervous system. Vice versa, in paresis, pathologic anatomists have pointed out that systemic lesions of syphilis are rarely seen. The lesion in the brain, being progressive and fatal, has permanently inhibited the development of spirochetes localized elsewhere. If, however, a lesion is located in some organ in which it is not progressive indefinitely, but resolves after a time, then it is only a question of time when the spirochetes localized in some other part of the body will begin to show their presence by a lesion.

SUMMARY

The views here expressed may be summarized as follows:

1. In syphilis, the spirochetes localize during the early septicemia and probably do not localize in the later stages.
2. All strains probably localize indifferently in certain organs. In addition, certain strains probably have an especial localizing power.
   (*a*) Various strains of *S. pallida* exist which differ in pathogenic properties.
   (*b*) These strains are probably permanent variations.
   (*c*) A strain isolated from the nervous system has shown marked power of generalization in the rabbit.
3. Early localization in the testicle has been demonstrated experimentally, and determination of latent infection may be feasible as a clinical procedure.
4. An active lesion in one part of the body tends to inhibit the development of potential lesions in other parts of the body.

(*This symposium will be completed next week and will be followed by the discussion.*)

HEMORRHAGE FROM THE SUPERIOR PETROSAL SINUS

AS A COMPLICATION IN OPERATIONS ON THE LATERAL SINUS*

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Hemorrhage from the superior petrosal sinus exists as a possibility in operations on the lateral sinus despite the fact that, with one exception, no mention is made of it in any of the literature published on mastoid or lateral sinus operations. Since attention has now been called to it there is little to add except to show briefly how the complication occurs, and how its results are frequently unfavorable to the patient.

The superior petrosal sinus is described in the various textbooks on anatomy as being one of the terminal divisions of the cavernous sinus, running in a small groove in the superior border of the petrous portion of the temporal bone in the attached margin of the tentorium cerebelli and terminating in the lateral sinus at the point where the sigmoid portion of that vessel begins.

While this termination is usually described as being through a single opening in the wall at the knee of the lateral sinus, this frequently is not the case. The petrosal is often found to empty itself through a series of openings 3 or 4 mm. apart, extending along the sinus wall at a distance of 2 or more cm. Knowledge of this fact is obviously of surgical importance in the control of hemorrhage from these openings after the lateral sinus has been incised.

It was not until some years after Richards had called attention to the faulty technic that was being generally followed in operations for sinus thrombosis that the importance of accurate inspection of the interior of the sinus was generally accepted. The latest authorities, however, now agree on the importance of getting a distinct view of the interior of the vein, and of removing the infected walls as well as the thrombus. Kerrison emphatically expresses this view in his book, recently published, when he says:

> The aim is to expose the interior of the vessel to actual inspection. To attempt less but adds to the patient's risks and supplies the surgeon with absolutely no data of diagnostic value.

In his description of the technic required to accomplish this, however, he implies that beyond possibly an emissary vein the sources of hemorrhage to be considered are solely the two extremities of the sinus itself. The other well-known text-books and articles on the subject give practically the same impression.

Except in Dr. Richards' article on operative treatment of sigmoid sinus thrombosis,[1] a review of literature relative to operations for thrombosis of the lateral sinus reveals comparatively few references to the superior petrosal sinus, and none at all to hemorrhage from that vessel as a possible complication to be encountered during the operation; so it would seem that the occurrence is not frequent. This view is strengthened by the experience of the majority of the surgeons whom I have consulted on the subject. Few of them recall cases in which the hemorrhage was definitely found to arise from the superior petrosal sinus, and yet not infrequently when a sinus is opened for relief of a suspected thrombus, hemorrhage is encountered despite the attempt at control exerted above and below the point of incision.

That the complication does not more frequently arise is due to the fact that the field of operation in the majority of cases is limited to the vertical limb of the sigmoid, and the posterior point of compression for the control of hemorrhage is anterior to, or just over the entrance of, the superior petrosal sinus. In more extensive cases of moderate duration the thrombus will frequently be found to extend into the superior petrosal, in which case there is, of course, no hemorrhage from that vessel.

Richards speaks of having opened the superior petrosal sinus almost throughout its whole length in

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12. Nichols: Jour. Exper. Med., 1911, xiv, 211.

* Read before the Section on Laryngology, Otology and Rhinology at the Sixty-Fifth Annual Session of the American Medical Association, Atlantic City, N. J., June, 1914.

[1] Richards: Arch. Otol., 1905.

a case of extensive thrombosis which had extended to it from the lateral sinus. While I have seen thrombi removed from the lateral sinus well past the openings of the superior petrosal without hemorrhage occurring from it, I have not seen the operation carried to that vessel in order to obtain from it free bleeding, although theoretically that might be the course to pursue.

The cases in which embarrassing hemorrhage from the superior petrosal are likely to occur are those in which the thrombus in the sigmoid extends to the region of its entrance but does not enter it. Injury to the sinus or to an emissary vein in the region of its knee during a mastoid operation will sometimes give rise to a rapidly formed septic clot which does not block the petrosal. In such cases, the pressure plug for control of hemorrhage from the torcular end of the sinus is placed behind the entrance of the superior petrosal, and if this is not blocked by clot, bleeding from it will obscure the field of operation and interfere with proper inspection of the interior of the vein.

Unless the source of this hemorrhage is recognized and the bleeding stopped, the operation is botched, and its purpose to ascertain definitely the state of things within the sinus is defeated. The operator relies on his assistant to control the hemorrhage from above and below the line of his incision with pressure pads placed on the wall of the vein. In such cases, the assistant whose office it is to block both ends of the sinus, seeing the free escape of blood despite his efforts at compression, may temporarily overlook the position of his compresses in relation to the opening of the petrosal, and exert too great pressure on the cerebellum in his vain attempt to control the hemorrhage. The operator, at the same time intent on observing the interior of the vein, is harassed by the flow of blood over the field, and he too may, in the confusion, overlook the source of hemorrhage.

The result is that more blood is lost than is good for the patient, the wound has to be packed to control the bleeding, and the patient is returned to bed with the source of his infection still present, and his resistance lowered by the loss of blood. This occurrence is exceptional, as has been stated; nevertheless it is sufficiently frequent to warrant some thought of it as a possibility in operations for sinus thrombosis. That it has received no mention in literature may be because it has been considered plainly obvious by the authors; but like other simple facts that are too infrequently met to be well remembered, it escapes attention until personal experience impresses on one the importance of its early recognition. Even personal experience with this complication does not invariably teach, for I have seen it occur to an operator's great confusion and yet remain to the end entirely unrecognized by him; otherwise he might easily have prevented it.

The tendency to blame the assistant for any escape of blood that occurs after the sinus has been opened, regardless of the position of pressure pads, is not uncommon. The relation of the distal compress to the opening of the superior petrosal must, of course, be considered, and I think that we have all seen undue pressure exerted on the sinus behind its knee without effect on the hemorrhage, but with what appeared to be marked traumatism to the cerebellum.

In the removal of cells from the angle of bone that lies between the knee of the sinus and the dura of the middle fossa, hemorrhage from the superior petrosal is occasionally seen. I know of three cases in which the vein was injured in this location without untoward result; two occurred during operations on very pneumatic mastoids; and one during a labyrinth operation. Here the injury is of little consequence, as the source of hemorrhage is easily seen and easily controlled; but in operations on the lateral sinus, unless the source of hemorrhage is recognized promptly as being from the superior petrosal sinus, when that vessel is the one involved, the delay in stopping it, and its interference with the object of the operation to remove the infected focus, jeopardize materially the patient's chance of recovery. For this reason, and from the fact that I have found no reference to this subject in literature, I have taken the liberty of calling attention to it.

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STUDIES ON THE ABSORPTION OF DRUGS*

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The idea is current among both pharmacologists and clinicians that substances which are readily soluble in water are also readily absorbable from the gastro-intestinal canal, except when some physical law, such as that of osmosis, interferes with the absorption. Thus a prominent pharmacologist, speaking of a drug which requires 950 parts of water for its solution, says, "It is evident, however, that a substance which is so sparingly soluble as this must go into solution in the intestine with great slowness, and, therefore, linger in the bowel for a considerable length of time."

A second belief, current more particularly among clinicians, and also held by many pharmacologists, is that there exists a fairly constant ratio between the dose of a drug by subcutaneous administration and that by mouth or rectum, or between the latter two. Cushny[1] says:

> As absorption from the subcutaneous tissues is so much more rapid than that from the stomach and intestines, when the drug is in perfect solution the dose has to be reduced. As a general rule, about one-half of the ordinary amount is sufficient.

It is, of course, recognized that there are many exceptions to this rule.

In a previous communication[2] one of us discussed some of the phases of this subject, considering mainly certain of the digitalis bodies. The present investigation is an amplification of that work in which we have included the study of absorption of different classes of drugs, using various species of animals.

The obvious importance of the subject of absorption to both the pharmacologist and the clinician led us to conduct our work with a view to its practical applications. The general mode of experimentation consisted of the administration of graded doses of the drug in question by each of the several channels available, and the determination of the approximate average minimal dose required by each channel for the production of a constant effect. Most of our figures for the digitalis bodies are taken from the records of previous experiments, many of which were primarily conducted for other purposes. Here, also, much of our work was confirmed by the determination of the actual amount of the drug present in the body. Many of the latter experiments have been discussed in the previous paper[2] and need not be again detailed in this place. The work has extended over several years and includes considerably more than a thousand experiments. For the sake of brevity we have presented the results in the accompanying tables. In addition we have compiled Part X of Table I from Maurel's figures.[3]

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* From the Laboratory of Pharmacology of Cornell University Medical College.

* Read before the Section on Pharmacology and Therapeutics at the Sixty-Fifth Annual Session of the American Medical Association, Atlantic City, N. J., June, 1914.

[1] Cushny, A. R.: Textbook of Pharmacology and Therapeutics Ed. 5, Philadelphia, Lea and Febiger, 1910, p. 35.

[2] Hatcher, R. A.: Variation of Dosage Dependent on the Method of Administration, THE JOURNAL A. M. A., Aug. 27, 1910, p. 746.

TABLE 1.—DOSES AND THEIR RATIOS FOR DIFFERENT CHANNELS OF ADMINISTRATION *

	Vein	Muscle	Subcut.	Mouth	Rectum
I. STRYCHNIN SULPHATE					
A. To dogs: hyperexcitability.					
Dose, mg. per kg.	0.075	0.075	0.075	0.075	0.075
Ratio	1	1	1	1	1
B. To cats; hyperexcitability.					
Dose, mg. per kg.	0.02	0.08	0.08	0.1	0.1
Ratio	1	4	4	5	5
	....	....	1	1.25	1.25
C. To guinea-pigs; convulsion.					
Dose mg. per kg.	0.3	3.0	3.0	40.0	....
Ratio	1	10	10	133	....
	....	....	1	13.3	....
II. PICROTOXIN					
A. To cats; convulsion.					
Dose, mg. per kg.	0.3	0.5	0.75	2.25	2.25
Ratio	1	1.6	2.5	7.5	7.5
	....	....	1	3	3
B. To guinea-pigs; convulsion.					
Dose, mg. per kg.	1.0	2.0	5.0	50.0+*	....
Ratio	1	2	5	50	....
	....	....	1	10	....
C. To rabbits; convulsion.					
Dose, mg. per kg.	1.5	....	5.0	20.0—*	....
Ratio	1	....	3.3	14	....
	....	....	1	4	....
III. CAMPHOR					
A. To dogs; convulsion. Solution in oil.					
Dose, gm, per kg.	....	0.5	0.75	0.5	0.75
Ratio	....	1	1.5	1	1.5
	....	....	1	0.66	1
B. To cats; convulsion. Solution in oil.					
Dose, gm. per kg.	....	0.5	0.5	0.25	0.75
Ratio	....	1	1	0.5	1.5
C. To dogs; convulsion. Solution in alcohol.					
Dose, gm. per kg.	....	0.75	1.5	0.5—	0.5+
Ratio	....	1	2	0.75	0.75
	....	....	1	0.33	0.33
D. To cats; convulsion. Solution in alcohol.					
Dose, gm. per kg.	....	0.7	0.5	0.5	....
Ratio	....	1	0.7	0.7	....
IV. NICOTIN					
A. To cats; fatal dose.					
Dose, mg. per kg.	1.5	....	5.0	10.0	....
Ratio	1	....	3.3	6.6	....
	....	....	1	2	....
B. to rabbits; fatal dose.					
Dose, mg. per kg.	10.0∓	....	30	200+	....
Ratio	1	....	3	20	....
	....	....	1	6.6	....
C. To guinea-pigs; fatal dose.					
Dose, mg. per kg.	2.25	....	10.0	250	....
Ratio	1	....	4.4	111	....
	....	....	1	25	....
V. OUABAIN					
A. To cats; fatal dose.					
Dose, mg. per kg.	0.1	....	0.15	0.7	....
Ratio	1	....	1.5	7	....
	....	....	1	4.6	....
B. To guinea-pigs; fatal dose.					
Dose, mg. per kg.	0.2	....	0.3	30.0+	....
Ratio	1	....	1.5	150	....
	....	....	1	100	....
C. To rats; fatal dose.					
Dose, mg. per kg.	21.0	....	100±	infinity	....
Ratio	1	....	4	infinity	....
VI. DIGITOXIN					
A. To cats; fatal dose.					
Dose, mg. per kg.	0.35	....	0.4	2.0	....
Ratio	1	....	1.13	5.7	....
B. To guinea-pigs; fatal dose.					
Dose, mg. per kg.	0.75	....	1.5	28.0+	....
Ratio	1	....	2	37 +	....
	....	....	1	18.5	....
C. To rats; fatal dose.					
Dose, mg. per kg.	17.0	....	43.0+	140 +	....
Ratio	1	....	2.8	8.3+	....
	....	....	1	3.3	....
VII. ATROPIN SULPHATE					
A. To cats; dilatation of pupil.					
Dose, mg. per kg.	0.02	0.03	0.04	0.5	0.7
Ratio	1	1.5	2	25	35
	....	....	1	12.5	17.5
B. To guinea-pigs; fatal.					
Dose, mg. per kg.	85	....	600	....	....
Ratio	1	....	7	....	....
VIII. APOMORPHIN					
A. To dogs; emesis.					
Dose, mg. per kg.	0.05	0.06	0.2	5.0	5.0
Ratio	1	1.2	4	100	100
	....	....	1	25	25
B. To cats; emesis.					
Dose, mg. per kg.	0.1	0.75	1.0	2.5	2.5
Ratio	1	7.5	10	25	25
	....	....	1	2.5	2.5
IX. MORPHIN					
A. To dogs; depression.					
Dose, mg. per kg.	0.1	0.1	0.1	1.0	4.0
Ratio	1	1	1	10	40
B. To cats; restlessness.					
Dose, mg. per kg.	0.5	0.5	0.5	0.5	1.0
Ratio	1	1	1	1	2
C. To cats; analgesia.					
Dose, mg. per kg.	0.075	1.0?†	1.0?†	0	0
Ratio	1	13.3?	13.3?	.....	....
D. To guinea-pigs; fatal.					
Dose, mg. per kg.	200+	400	400	1000	....
Ratio	1	2	2	5	....

X. RABBITS ‡

A. Spartein Sulphate

	Vein	Subcut.	Mouth	
Dose	0.03	0.1	0.5	Mg. x kg.
Ratio	1	3.3	16	
	....	1	5	

B. Caffein Hydrobromid

	Vein	Subcut.	Mouth	
Dose	0.2	0.3	1.8	Mg. x kg.
Ratio	1	1.5	9	
	....	1	6	

C. Strychnin Sulphate

	Vein	Subcut.	Mouth	
Dose	0.5	1.0	3.0	Mg. x kg.
Ratio	1	2	6	
	....	1	3	

D. Potassium Sulphocyanid

	Vein	Subcut.	Mouth	
Dose	0.15	0.55	1.0	Mg. x kg.
Ratio	1	3.6	6.1	
	....	1	1.8	

* In this table the sign + indicates that the dose stated often fails to produce the effect; the sign — indicates that a smaller dose sometimes produces the effect.

† Presence of analgesia exceedingly doubtful with any but vein dose.

‡ From Maurel.

TABLE 2.—COMPILATION FROM TABLE 1

Ratios	Subcut.	Mouth	
Dogs:			
Minimum	1	0.33	Camphor
Maximum	1	25.00	Apomorphin
Mean	1	7.4	
Corrected *	1	2.9	
Cats, ratios:			
Minimum	1	0.5	Camphor
Maximum	1	12.5	Atropin
Mean	1	3	
Corrected †	1	2	
Guinea-pigs, ratios:			
Minimum	1	2.5	Morphin
Maximum	1	100.0	Ouabain
Mean	1	28.4	
Corrected ‡	1	16.9	
Rabbits, ratios:			
Minimum	1	1.8	Potassium sulphocyanid
Maximum	1	6.6	Nicotin
Mean	1	4.4	

* Corrected by omitting from the average the exceptional case of apomorphin.

† Corrected by omitting the exceptional case of atropin.

‡ Corrected by omitting the exceptional case of ouabain.

CONSIDERATION OF TABLES

Table 1 gives the drugs used, the animals to which each was given, the effect chosen for observation, the modes of administration employed, the average minimal dose by each of these modes, and the ratios of these doses. The ratios have been calculated by taking the intravenous, the intramuscular or the subcutaneous dose, as the case demanded, as unity and dividing this

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3. Maurel: Compt. rend. Soc. de biol., 1907, pp. 897, 960; ibid., 1908, p. 725.

into the doses determined for the other modes of administration.

Comparing Parts I, IV, VII, VIII and IX of Table 1, in all of which we are dealing with alkaloidal salts, we see that the ratios of absorption from the several channels in any one animal differ considerably. Thus, in the case of dogs the oral dose of strychnin which causes hyperexcitability is the same as that by vein, intramuscularly or subcutaneously, while for morphin the oral dose which causes perceptible depression is ten times that by vein, though the intramuscular and subcutaneous doses are the same as the intravenous. The difference in the case of apomorphin is even more striking, and here also, the intramuscular and subcutaneous doses are larger than the intravenous, and the subcutaneous is larger than the intramuscular dose. Analogous differences are seen to prevail in the cases of cats and guinea-pigs. In the case of man it might be mentioned that approximately the same dose of apomorphin is required to produce emesis whether given by mouth or subcutaneously. The same ratio holds for morphin, and one of us (C. E.) has also found that man requires about the same dose of morphin by vein as orally or by subcutaneous injection to produce a given effect.

It is obvious, therefore, that drugs of the same general class—alkaloidal salts—show very different ratios of absorption in any one of the several classes of animals.

It is equally obvious that the same classes of drugs show very wide differences in their ratios of absorption in different animals.

When the absorption ratios of different drugs in the same class of animals are compared we again find wide variations. For example, in cats the oral dose of morphin required to produce restlessness is the same as the intravenous dose, atropin requires 25 times the intravenous dose to cause dilatation of the pupil when given by mouth, while the oral dose of picrotoxin is only 7.5 times, and that of digitoxin 5.7 times the intravenous dose.

Salant and Rieger[4] give the same amount—150 mg. per kilogram—of caffein as the fatal dose for cats for both oral and subcutaneous administration, and we have found that the fatal dose by vein for cats may vary from 5 to 150 mg. per kilogram, depending on the rate of administration. This observation is of especial importance in view of the fact that the smaller fatal dose corresponds to amounts habitually taken daily by many persons in the form of tea and coffee, and caffein is occasionally used intravenously in man.

A given animal, therefore, shows widely divergent ratios of absorption from the several channels for different drugs.

Table 2 presents the results of a collective analysis of all the ratios, and shows the mean ratios for the four types of animals employed, taking into consideration all of the drugs used. As certain of the figures stood out prominently as marked exceptions to the general run of ratios, the mean ratios were recalculated with these more exceptional instances omitted, as indicated in the footnotes to the table. One is immediately impressed with the fact that in both dogs and cats the corrected mean ratio of the oral to the subcutaneous dose agrees closely with the statement quoted from Cushny,[1] that the subcutaneous dose is about half of the ordinary oral dose. While this agreement might at first seem to indicate the general applicability of the rule, a moment's consideration will show that nothing could be farther from the truth or a more dangerous conclusion. The maximum variation in the oral to subcutaneous dose ratios in the case of the dog is as 1 : 75, and the cat as 1 : 25. The rule, given by Cushny, in fact fits no single drug studied on either of these two animals except in the case of nicotin in the cat, and possibly those of apomorphin and ouabain for the same animal. It is hardly necessary to discuss the mean ratios obtained for the guinea-pig and rabbit as these will be taken up later in another connection.

Another point of difference in the ratios of absorption was also brought out in our work, and is one which is not generally appreciated. It is that the ratios of absorption of the same drug in the same animal may be different when the dose is adjusted to the production of different effects. This is illustrated by the case of morphin in the cat. When restlessness is taken as the end-effect to be obtained, the ratio of the vein dose to the intramuscular, subcutaneous and oral doses is as 1 : 1 : 1 : 1, while when the production of analgesia is desired the intramuscular and subcutaneous doses are each about 13 times as great as that by vein, if indeed it is possible to determine a definite ratio for these two methods of administration. Analgesia could not readily be obtained when the drug was given by mouth or rectum. Again, in the case of nicotin on the guinea-pig, death resulted from the subcutaneous injection of 4.4 times the vein dose, and 111 times the vein dose killed the animal when administered orally. But, when the development of convulsions alone was sought, 33 times as much was required by subcutaneous injection as by vein, and even a dose greater than the fatal did not cause convulsions when given by the mouth. Kleiner and Meltzer[5] report somewhat analogous differences in the doses of epinephrin required by different modes of administration to produce glycosuria.

The same drug in the same animal, therefore, may show different ratios of absorption when the doses used are adjusted to the production of different effects.

It is shown in the tables that there is a certain degree of similarity between cats and dogs in the ratios of absorption of any given drug, and what little evidence we have leads us to believe that the absorption of drugs in these animals by the several channels of administration is not widely different from that in man. On the other hand, the rodents form a class by themselves with regard to the absorption from the gastro-intestinal tract of drugs derived from the vegetable kingdom. Among these animals there is apparently a much greater selective capacity for absorption from the gastro-intestinal tract than is the case in the cat or dog. The white rat and the guinea-pig may resist almost completely the absorption from the alimentary tract of a drug which is quite soluble in water, while one which is quite insoluble may be absorbed readily. Thus the oral convulsant dose of the readily soluble strychnin sulphate is 133 times that by vein in the guinea-pig, while only 37 times as much of the insoluble digitoxin is required orally as by vein to kill this animal. White rats do not appear to absorb even traces of the soluble ouabain from the alimentary canal. The literature contains numerous isolated instances showing the variability of absorption from the gastro-intestinal tract of the rabbit; but the guinea-pig is generally much more resistant than the rabbit to absorption from this structure.

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[4] Salant and Rieger: Bull. 148, Bureau of Chem., 1912, p. 59.

[5] Kleiner and Meltzer: Jour. Exper. Med., 1913, xviii, 190.

Such marked resistance to absorption from the gastro-intestinal tract as frequently occurs among the rodents is encountered in only a few instances among either cats or dogs, that is, in the cases of some digitalis bodies, and of apomorphin to the latter animal. As the result of extended experiments with apomorphin we are led to the belief that the failure to induce emesis after oral administration to the dog is due to the fact that a certain minimum concentration of the drug in the body is required for the stimulation of the vomiting center, that the drug is rapidly eliminated from the circulation and, therefore, that the large oral dose is necessary on account of the relatively slow absorption rather than through any incompleteness of this process. Such an explanation is also probably applicable to the case of most of the vegetable drugs in rodents, for we have evidence of the extremely rapid excretion of certain drugs by these animals. But here we also usually encounter a true marked resistance to absorption, as has been proved to be the case with ouabain in the white rat.

That similar, though less frequent, instances of resistance to absorption from the alimentary canal of readily soluble substances are encountered in man has been shown in our previous paper in the case of strophanthus. We have also observed that certain drugs are absorbed to only a slight degree from the alimentary tract of all the animals used and of man. Striking examples of these drugs are found among the digitalis bodies, as convallaria, apocynum and strophanthus.

It is, therefore, shown that drugs which are readily soluble in water may be absorbed very poorly or not at all from the gastro-intestinal tract of mammals, and, conversely, that drugs which are insoluble in water may undergo rapid absorption from this tract.

It is fairly well known that colloids may impair absorption from any of the channels of administration. This was shown for strychnin[6] and it is brought out in reference to oils in the figures given here for the absorption of camphor. It is seen that absorption of this drug from the alimentary canal of the dog is more rapid than from the subcutaneous tissues, and in the case of the cat than from the muscles also. The same, however, is true if the camphor is dissolved in alcohol, but in this case the cause is probably different and is referable to the prompt precipitation of the camphor in contact with the tissue fluids. This would form a depot in the muscles or subcutaneous tissues, while in the gastro-intestinal tract the drug, though precipitated, would be spread over a large absorbing surface.

The tables show that most substances in watery solution are absorbed most effectively from the muscular tissues, next from the subcutaneous, and least from the gastro-intestinal tract, and that the differences between the subcutaneous and oral ratios of absorption are generally greater than between the intramuscular and subcutaneous. These relations are also brought out in Table 3, in which the absorption times are compared for a few of the drugs used. This observation is not new, and Meltzer and Auer[7] compared the absorption from the subcutaneous and muscular tissues. Our results are merely confirmatory, though they also serve to show that such relations are by no means universal, for we record certain marked exceptions in which the absorption from the alimentary canal of drugs in aqueous or saline solution is quite as complete as from the muscle, although somewhat less rapid.

TABLE 3.—TIME RELATIONS OF ABSORPTION, BASED ON AVERAGES

	Vein	Muscle	Subcut.	Mouth
I. STRYCHNIN SULPHATE				
A. To cats; hyperexcitability.				
Time, minutes	3.8	7.8	18.2	40
Ratio	1	2	4	10
B. To guinea-pigs: convulsion.				
Time, minutes	2	6.5	9.3	36.6
Ratio	1	3.2	4.6	18.3
II. NICOTIN				
A. To cats; fatal dose.				
Time, minutes	3	..	7.7	37.5
Ratio	1	..	2.5	12.5
B. To guinea-pigs; fatal dose.				
Time, minutes	2.8	..	2.5	12
Ratio	1	..	1—	4
III. PICROTOXIN				
A. To cats; time to first symptom.				
Time, minutes	4	12.2	38	19.4
Ratio	1	3	9.5	5
B. To guinea-pigs; to convulsion.				
Time, minutes	5.3	19	26	313
Ratio	1	3.5	4.8	59
C. To rabbits; to first symptom.				
Time, minutes	6.5	..	7	16.5
Ratio	1	..	1+	2.5
IV. CAMPHOR IN OIL				
A. To cats; time to first symptom.				
Time, minutes	..	23.2	179	46.1
Ratio	..	1	7.3	2
V. CAMPHOR IN ALCOHOL				
To cats; time to first symptom.				
Time, minutes	..	199	177	61
Ratio	..	1	0.9	0.3

There are many scattered instances in the literatur which show that the fatal subcutaneous dose of eac of several drugs is from four to five times that b intravenous injection in rabbits.

In this study we have dealt with the ratios of absorption of the several drugs from the ordinary channel of administration in a number of different animals, an we have not concerned ourselves with the questio of the mechanisms which enter into the absorption o the several drugs from the different tissues of the animals. Some studies bearing on this question hav been published recently by workers in Sollmann' laboratory.[8]

RECAPITULATION

1. Drugs of the same chemical class show ver different ratios of absorption from the different channels of administration in any one class of animals.

2. Drugs of the same chemical class show wide differences in the ratios of their absorption from corresponding channels when different classes of animals are compared.

3. The absorption ratios of different drugs in the same class of animals vary widely.

4. Collective analysis of the ratios of subcutaneous to oral doses in the cat and dog show that the range of variation of the individual instances from the mean is far too great to permit of any generalization. Although the averages of all the ratios would seem to show that the subcutaneous dose is about half a great as the oral, it should be stated emphatically tha any generalization would be a source of grave dange in practice.

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[6] Hatcher, R. A.: Am. Jour. Pharmacol., 1902, lxxiv, 283.

[7] Meltzer and Auer: Jour. Exper. Med., 1905, vii, No. 1.

[8] Sollmann, Hanzlik and Pilcher: Jour. Pharmacol. and Exp. Therap., 1910, i, 408. Hanzlik, P. J.: Ibid., 1911, iii, 387. Han and Collins: Ibid., 1913, v, 185.

5. The same drug may show different ratios of absorption when its dosage is adjusted to the production of different effects, even in the same animal.

6. Rodents as a class show much greater selective capacity for absorption from the alimentary canal than do the cat and dog. In some instances they almost completely resist the absorption of drugs which are readily soluble in water, while absorbing an insoluble drug fairly well. Similar resistance to absorption was rarely observed in the cat, dog or man.

7. Rodents also exhibit a marked capacity for the rapid excretion or elimination from the blood-stream of many vegetable poisons.

8. A few drugs resist absorption to a marked degree from the gastro-intestinal tract of all animals so far employed.

CONCLUSIONS

1. Ratios of absorption from the four common channels of administration of drugs have been determined in five mammals, and certain observations with regard to the ratios of absorption in man have been recorded. The drugs used included representatives of several different chemical classes, such as, alkaloids, glucosids, neutral principles, etc.

2. Each drug is a law unto itself in respect of the ratio of absorption from the different channels of administration in any animal.

3. In general, the subcutaneous and oral doses lie nearer to the intravenous dose in the cat and dog than in the rodents.

4. The guinea-pig in general seems far more resistant to the absorption of most vegetable drugs from the alimentary canal than is the rabbit, and vastly more so than are the cat and dog.

5. Certain drugs, very soluble in water, are absorbed slowly, or occasionally not at all, from the gastro-intestinal tract, this being especially marked in the case of the white rat and the guinea-pig.

6. Certain vegetable drugs, insoluble in water, are absorbed readily from the alimentary canals of the cat and dog, and relatively so from those of the rat and guinea-pig.

7. *No rule can be formulated for the calculation of the appropriate dose by one mode of administration from the dose by any other mode of administration. Such determination can be made only by experiment.*

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ABSTRACT OF DISCUSSION

Dr. Samuel James Meltzer, New York: In answer to Dr. Solis-Cohen's question, about six years ago we experimented on dogs by injecting magnesium sulphate through the rectum. We observed at that time no ill effects from these injections. The number of experiments, however, was too small to justify any definite conclusions from them. Especially, since it is known that inhalation of ether has a considerable influence on the profound effect of magnesium sulphate, such injections may ocassionally, indeed, be not without danger. Furthermore, we have recently learned much more about the nature of the ileocecal valve, and that in some pathologic cases this sphincter is inactive and, therefore, fluid injected into the colon may in these cases perhaps go up into the small intestines. There cannot be much discussion as to the correctness of the results. The action of curare, for instance, is a striking example. It has a fatal effect when given intravenously or even intramuscularly, and it may have no effect whatsoever when given by the mouth. This was established nearly fifty years ago. We have made several contributions showing the striking quantitative difference in the effects between intramuscular and subcutaneous injections. Our recent experience may lead us even to a further distinction between the stomach and the intestines. Many years ago I experimented on animals with the administration of magnesium salts by the mouth and found that it practically had no poisonous effect. Recently in experiments made by Auer and myself we discovered that magnesium salts, injected directly into the small intestines in certain doses and concentrations, may be as fatal for the animal as when given intramuscularly. The point I made has some practical bearing. You will recall that Dr. McCosh advised, some eighteen years ago, the injection of magnesium sulphate into the small intestine after laparatomies, before closing the abdomen. So far as I know this method is still practiced by some surgeons. I have reason for my suspicion that it may have been the cause of a fatal outcome in some cases.

Dr. Solomon Solis-Cohen, Philadelphia: Does Dr. Meltzer make a difference between the large and small intestine concerning the inhibiting effect of magnesium sulphate? Everyone knows that in hospital wards the so-called "triplex enema" of magnesium sulphate in glycerin and water is quite commonly used, and, so far as I know, no accident has occurred in consequence—in fact, experience shows it to be efficacious in emptying the bowel. If there is danger from the introduction of Epsom salt into the rectum or colon or if there is no advantage in the use of that particular salt, that is, if the effect is merely osmotic, however, it would be well to substitute some other saline compound. On the other hand, if it is a question of absorption and quantity, I should like Dr. Meltzer to make that point clear. I am not at all convinced that *absorption* is exactly the right word to use in describing some or the totality of the phenomena described. Dr. Eggleston pointed out that the ratios representing the comparative effects of the various methods of administration differed considerably according to the special effect which he wished to produce. There is something more than absorption concerned in that; it is a question not alone of active quantity but also of tissue affected. There is selective tissue action, proportional concentration (partial pressure), mass action and many other physicochemical and biologic reactions beside the mere question of the time or rate of the taking up of the substance into the circulating fluids—and this last is what I understand by absorption.

Dr. Cary Eggleston, New York: We were of course acquainted with the facts concerning the non-absorption of curare and also of the peculiarities concerning the absorption of magnesium sulphate, but the little heed which has been paid to these observations gives all the more reason for our present work. In reply to Dr. Meltzer's remarks on absorption from the gastro-intestinal tract and the division of this tract into several functionally different portions, I would say that the physician usually gives his drugs for absorption from the gastro-intestinal tract by way of the mouth and seldom directly into the intestines, and further, one seldom is dealing with a stenosis of the pylorus such as was artificially produced in Dr. Meltzer's dogs. Our observations were not intended to take into consideration such abnormal conditions, but were directed to a study of the problems encountered in the ordinary administration of drugs. I might call attention to the fact that several deaths have been reported from the absorption of magnesium sulphate from the intact intestine after ordinary oral administration of concentrated solutions. In reply to Dr. Cohen's query: the question is one, not of difference in total quantity administered, but of the ratio between the rate of absorption and that of excretion or fixation, so that with the majority of drugs the type and intensity of action depends on the concentration of the drug in the blood-stream or the tissues at any one moment. This is, however, not always the case, as is well demonstrated by the digitalis bodies. Further, in the case of this group of drugs, we have reason to believe that there is no chemical alteration, for the drug can be recovered apparently in its original form from the tissues of an animal,

THE LOCAL PREPARATION OF PATIENTS FOR OPERATION *

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The ideal operation, from an aseptic standpoint, is one in which every element connected with the procedure is free from germ life. The use of moist heat and formaldehyd gas as sterilizing agents places everything, except the skin, within the realm of the ideal. The use of sterile rubber gloves by the operator and his assistants places them, also, from a practical point of view, within the same realm. The skin of the field of operation alone remains as a subject for thought, study and experimentation.

From the point of view of the artist, the skin is a beautiful, perfectly smooth covering of the framework of the body; from the point of view of the physiologist, the skin is a wonderful regulator of bodily temperature, a marvelous excretory apparatus, a soft, pliable covering which protects the underlying tissues om the corrosive action of the air and of fluids or ther substances which might come in contact with it; from the point of view of ideal asepsis, the skin is a structure marred by cracks and crevices and crater-like openings, smeared with a mass of debris, and polluted by innumerable wound-infecting micro-organisms. The cracks and crevices are formed by the natural infoldings of the epidermis and by the constant death and exfoliation of the superficial cells of the epidermis. The crater-like openings are the mouths of the ducts of the sebaceous and sweat-glands and the points of exit of the hairs. All of them are inaccessible hiding-places where germ life not only may, but does, lurk. The debris is composed of the secretions and excretions of the glands, countless broken-down cells, and mechanical dirt. It surrounds bacteria and protects them from the action of many of the chemical agents used to destroy them.

The researches of Welch, of Miguel, of Hohein, of Maggiora, of Leedham-Greene, of Heagler, and of almost numberless others show conclusively that bacteria have constant habitation on or in the skin. These germs are not free on the surface from which they might be removed by the sweep of a brush: they are imbedded in the grease and albuminous matter of the skin's debris; they are in the cracks and crevices between the cells of the superficial layers of the epidermis; they are in the crater-like mouths of the ducts of the sebaceous and sweat-glands; they are on the hairs and in the hair follicles. If the germs on the surface of the skin be removed or destroyed, their places will be taken by their fellows in the deeper layers, the latter being brought to the surface by the constant outward activity of the skin. While this action, ordinarily, will cause reinfection of the surface within from two to thirty minutes, yet it is through this action that the skin may be rendered free from germ life.

To enter the realm of the aseptic ideal, the skin of the field of operation must be free from germ life and must remain so during the course of the operative procedure. This must be proved by both clinical and laboratory results. Many writers have reported laboratory findings that support their assertions that the various methods advocated by them have produced the ideal; the same methods in the hands of other surgeons and investigators have given different results. A perfect laboratory test of the sterility of the skin would demand a study of a piece of the skin. As this procedure is not always feasible, the test made cannot give more than approximate results. Welch passed a silk ligature through the skin; Haeger rubbed the surface of the skin with a silk ligature; Fürbinger scraped the skin with an orange-wood stick; Leedham-Greene used strips of ivory or silk; Schleich stroked the skin with platinum wire. To obtain approximately accurate tests, scrapings of the skin must be imbedded, with certainty, in the culture medium; this practically eliminates all methods of testing which do not leave the scraping instrument buried in the medium. All antiseptics used must be neutralized or removed from the skin before the test is made, because an almost infinitesimal quantity of many antiseptics will be sufficient to prevent development of bacteria. As demonstrated by Leedham-Greene and others, the skin must be moist when the scrapings are taken, because, in a dry condition, the cement substance of the epidermis holds the cells and the bacteria in place to a much greater extent than it does when moist. Tests must be made from fifteen to thirty minutes after the supposed sterilization to prove that active bacteria have not been thrown onto the surface from the deeper layers of the epidermis. To prove conclusively the value of any method, the skin should be infected with an active culture of some resistant, easily recognized, bacterium.

The many methods advocated for sterilizing the field of operation may be grouped into two classes, the wet and the dry, with a combination of these two forming a third. In the first class, the methods attempt to remove from the skin bacteria, broken-down cells, oily and fatty matter, and mechanical dirt, and to destroy any germs that may remain. In the second class, the methods omit any attempt at removal of germ life, mechanical dirt or debris, except through dry shaving, but rather attempt to destroy all germs on or in the skin and to lock up in the cracks and crevices all micro-organisms that have not been destroyed. The third class of methods combines these two ideas.

In the first class, the skin is thoroughly rubbed or scrubbed with hot water and soap and then shaved. The field is again rubbed or scrubbed with soap and hot water, or at times with a combination of castile soap, mustard flour, and corn-meal. The action of the water is that of a solvent and vehicle for the removal of exfoliated cells, mechanical dirt, some of the fatty matter of the skin, and bacteria. The water causes the superficial cells to become more or less engorged or swollen and increases exfoliation. The heat increases the solvent power of the water, acts as a stimulant to the skin, and causes a hyperemia with consequent increased activity of the glands. The soap is used to emulsify the fats on the surface of the skin, to soften the hairs, and to act as a general detergent. The official sapo and sapo viridis, hard soap, soft soap, fluid soap; soap impregnated with pumice or with such antiseptics as mercuric chlorid, mercuric iodid, phenol, boracic acid, salicylic acid, trikresol, etc., are used and each has its advocates. An alkaline soap is necessary for emulsification of the fatty matter, but an excessively alkaline soap will injure the skin if used very freely. The soap should make a good lather so that it may enmesh debris and bacteria and insure their removal from the skin when it is removed. The shaving removes the hairs, which are always surgically

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dirty and which might act as a mechanical hindrance during the operation, scrapes away much of the debris, and opens the mouths of the hair follicles. Improper shaving will cause excoriations of the skin, which should be avoided at all times. The length of time devoted to the rubbing and scrubbing process varies with different surgeons from five to forty-five minutes. The advantage of prolonged mechanical cleansing, with abundant use of hot water and soap, lies in the removal of great numbers of bacteria and debris, many of the former being brought to the surface from the deeper layers through the increased activity of the skin. The objection to prolonged mechanical cleansing, especially when a stiff brush is used, is found in the removal of too many cells with consequent minute excoriations which make the skin much more vulnerable. The mechanical cleansing is followed by the application of antiseptic solutions.

As a result of experience and experimentation, the chemical sterilization of the skin is being limited more and more to the use of alcohol in from 60 per cent. to 80 per cent. strength and solutions of mercuric chlorid, of biniodid of mercury, of iodin (with or without the addition of potassium iodid), and of thymol.

Possibly habit has much to do with the continued use of aqueous solutions of mercuric chlorid. They have been used since the early days of antisepsis, although it has been proved by Harrington, by Post and Nicoll and numerous others, that the solutions used have practically no germicidal value in the time the germs are exposed to their action. Post and Nicoll conclude from their experiments that watery solutions of mercuric chlorid "are absolutely ineffective where prompt disinfection is required, as in the disinfection of the hands and fields of operation." The mercuric chlorid coagulates albumin. Aqueous solutions have slight, if any, power of penetration into the deeper layers of the epidermis.

Alcoholic solutions of mercuric chlorid are much more efficient than aqueous, and markedly so when used on a dry skin. When the solution is acidulated, as advocated by Harrington, it has still greater germicidal power. Harrington's solution will destroy all ordinary germs in from thirty seconds to two minutes. It is painfully irritating to the skin and for this reason should be used only after the patient has been anesthetized. It should be removed within a minute or so by washing with 70 per cent. alcohol.

Watery solutions of biniodid of mercury, especially when combined with potassium iodid, are much more efficient than the same strength solutions of mercuric chlorid. This combination does not coagulate albumin, but requires from ten to thirty minutes to destroy germ life. Alcoholic solutions of the biniodid are much more efficient than the aqueous.

Alcohol, chemically pure, as shown by Koch, has no germicidal power; Sternberg's experiments show that 95 per cent., also, is without germicidal effect. Post and Nicoll claimed germicidal power in solutions as weak as 30 per cent.; Leedham-Greene, after a long series of experiments, concluded that the greatest germicidal power was found in strengths of from 60 per cent. to 70 per cent. Alcohol has the power to penetrate into the cracks and crevices of the skin, as claimed by Braatz, through its ability to decompose and remove small particles of air that may be present. Its penetrating power is much greater on a dry than on a wet skin. Alcohol hardens and fixes the superficial cells of the epidermis. As a solvent or vehicle for the various antiseptics used on the skin, it is vastly superior to water, the alcoholic solutions penetrating more deeply and having greater germicidal power than the aqueous. The alcoholic solutions are more efficient when made with 70 per cent. alcohol than with 95 per cent.

Since the original paper of Grossich appeared in 1908, iodin has been lauded by surgeons far and wide as the chemical which would place the skin of the field of operation in the realm of ideal asepsis. Grossich's method is to shave the part dry and paint it with a 10 or 12 per cent. solution of iodin in alcohol. He insisted, and his conclusions have been confirmed by the studies of others, that the skin must be dry when the iodin is applied; that the presence of water prevents penetration of the iodin because the water macerates the epidermal cells and causes them to swell, thus plugging up the cracks and crevices and openings in the skin. Iodin applied to a wet skin has a tendency to cause suppuration and blistering. The original method of Grossich has been modified by others, the strength of solution being changed considerably, a fractional sterilization being instituted, and the application of iodin being made on a dry skin after it had been shaved and thoroughly scrubbed.

Aqueous solutions of iodin are less efficient than alcoholic. Solutions made with 70 per cent. alcohol have greater germicidal power than those made with 95 per cent. The addition of potassium iodid makes the solution much more stable and enhances the germicidal value. The official tincture of iodin, containing 7 per cent. iodin and 5 per cent. potassium iodid in 95 per cent. alcohol, is increased in germicidal power by diluting with one part water to four parts tincture.

Iodin in benzene, 1:1000, as a preliminary wash for the skin, followed by the application of a 3 per cent. solution of iodin in alcohol, is lauded by some surgeons. The benzol acts as a "solvent which dissolves and carries into solution all of the oily or waxy substances found normally on the skin, in its various crevices and appendages." Zanetti advises the use of a saturated solution which contains 9.75 per cent. iodin.

A 5 per cent. solution of thymol in alcohol has distinct antiseptic powers, but it is not markedly germicidal. Its use is advocated because it can be used on a wet or dry field without increasing the dangers of suppuration and blistering as iodin does on a wet skin.

To remove fatty matter, act as a germicide, and aid in drying the skin after the use of the wet methods, washing with ether is resorted to. It does not dry the skin sufficiently to allow the immediate application of iodin.

In the second, or dry, class of methods, the field of operation is shaved dry and is then painted with an alcoholic solution of iodin or rubbed with a 1:1000 solution of mercuric chlorid in 70 per cent. alcohol. Two or more applications of either may be made, time being allowed between the applications for thorough drying. In this class of methods, attempt is made to kill all germs with which the agent comes in contact, and so harden and contract the superficial cells of the epidermis that all remaining germ life may be prevented, effectually, from reaching the surface of the skin. To aid in obtaining this result, the skin may be covered with adhesive rubber dam, as advised by Murphy, or painted with a special varnish, as advised by McDonald.

A combination of the methods consists in the use of the wet from ten to twelve hours before operation and the application of the dry eight to ten hours later, followed by a second application after the patient has been placed on the operating-table.

The proper application of these methods will afford a field of operation that will be sufficiently sterile to allow healing *per primam* in a very large majority of cases, the natural resistance of the tissues being capable of overcoming the activities of the remaining micro-organisms. None of the germicides mentioned will destroy, with certainty, all germs on or within the skin. It may be rendered free from germ life, however, if the powers of Nature are called into play. It is well recognized that few infected wounds are seen in those who bathe frequently, or in those whose occupation causes sweating. In both instances the skin is kept more active and actually cleansed by being washed from within outward. During health there is never-ceasing exfoliation of epidermal cells and unremitting excretion and secretion of the products of the sebaceous and sweat-glands. By stimulating this activity of the skin it is possible to have it wash itself so free from germ life that it will remain sterile until infected from without.

In several tests made at the German Hospital (and I wish to take this opportunity to thank the members of the resident staff for the interest and aid given me in making the tests), the only perfect results were obtained in those cases in which the skin had been washed from within outward by the forces of Nature. In these tests scrapings of the skin were taken with orange-wood sticks or mother-of-pearl strips roughened, the wood or pearl strips being imbedded in liquefied agar or bouillon and incubated for ninety-six hours.

In one series of tests, both wet and dry methods were used. The chemical agents used were neutralized or removed. Tests were made before and after neutralization. Practically every test made before neutralization gave no growths; after neutralization, more than 60 per cent. gave growths. The various fields were then protected by sterile coverings and another test was made thirty minutes later. In one instance in which iodin had been used according to the dry method, and in one in which the skin had been scrubbed with mustard flour, no growths were obtained. In every other instance of this series of about eighty-five tests, a growth was obtained, the natural activity of the skin having brought to the surface active bacteria from the deeper layers of the epidermis.

In another series of tests of the hands, the number of bacteria obtained from the surface decreased with succeeding operations, the hands being scrubbed and incased in sterile rubber gloves between each two operations. After the seventh or eighth operation the skin of the hands of the operator was sterile and remained so until contaminated from without. The decrease in the number of bacteria found was proportionate to the activity of the hands of the person tested, the operator showing the greatest decrease, the first assistant the next decrease, etc.

In another series, the skin was thoroughly sweated by exposure in a steam bath or in a hot-air oven. After the sweating the skin was washed with sterile water and soap and was then tested. Twelve per cent. of these tests gave no growth after ninety-six hours' incubation.

In another series, cataplasma kaolini, as made at the German Hospital, was applied hot to a wet-shaved part and allowed to remain in place twelve hours. It was then removed and the field was washed with soap and water and tested. Another application of the cataplasm was then made and the same procedure carried out at twelve-hour intervals for forty-eight hours. The skin was then protected by a dry sterile covering and again tested after a twelve-hour interval. In this series, 100 per cent. of the tests gave growths at the end of twelve hours; 50 per cent. gave growths at the end of twenty-four hours. No growths were obtained in any instance after the twenty-four-hour test. The cataplasma kaolini, as made at the German Hospital, consists of 50 per cent. glycerin and 50 per cent. of kaolin combined with a negligible quantity of flavoring-matter and antiseptics. In this application, advantage is taken of the heat which is retained by the cataplasm for a considerable period of time and of the power of the glycerin to abstract fluids from the tissues, which, according to Cushny, is due to its great avidity for water. The combined action of the heat and the glycerin is to cause such an outpouring of fluids from the skin that it literally washes itself and frees itself from all germ life.

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PITUITARY EXTRACT

AN EXAMINATION OF SOME COMMERCIAL PREPARATIONS MADE FROM THE POSTERIOR LOBE OF THE PITUITARY BODY*

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Among the numerous therapeutic agents which have been introduced into medicine within the last few years is pituitary extract, an aqueous decoction of the small structure known as the pituitary body, which lies at the base of the brain. This important structure is enclosed in the bony cavity of the sphenoid bone, the sella turcica; when it is extirpated death soon results or when it is invaded by new growths marked metabolic changes occur.

The pituitary body, or as it is more often termed the pituitary gland, is a neuroglandular structure which in the higher animals is composed of two main parts, an anterior or glandular lobe, and a posterior lobe, the "pars nervosa," which contains nervous tissue mainly. The posterior lobe is small in comparison with the anterior lobe and has surrounding it an epithelial covering, the "pars intermedia," which separates it from the anterior lobe.

In its development it is seen to have a double origin, the anterior part and pars intermedia arising from an upgrowth of buccal ectoderm (Rathke's pouch), which meets a prolongation of neural ectoderm from the anterior brain vesicle. As development proceeds, the buccal ectoderm gradually envelops the projecting neural ectoderm like a pouch, the prolongation thus enclosed later becoming the posterior lobe. During the development of the sphenoid bone the mass of buccal ectoderm becomes enclosed in it and almost obliterates the space between the buccal pouch and neural ectoderm.

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While the function of the pituitary body is not fully known, certain facts have been established either by injecting extracts of its various parts into animals, or by extirpating its lobes and noting the symptoms arising therefrom. The first work of a strictly physiologic nature was done by Oliver and Schäfer[1] in 1895. They found that intravenous injections of pituitary extracts into animals caused a prolonged rise in the blood-pressure which they concluded was due to a peripheral constriction of the arterioles, together with an increase in the activity of the heart. Howell[2] later showed that the effects described by Oliver and Schäfer were due to posterior lobe principles, the anterior lobe extracts being inactive. Magnus and Schäfer[3] described a diuretic effect from posterior lobe extracts and called attention to the unequal constriction produced on the peripheral vessels, the kidney vessels dilating when the pressure rises. Cramer[4] observed mydriatic effects from posterior lobe extracts. Pituitary extracts were found by Borchardt[5] to cause glycosuria. While working on ergot, Dale[6] noticed a contraction of the cat's uterus when pituitary extracts were given intravenously. He later showed that posterior lobe extracts stimulate all involuntary muscle directly and that no true immunity was produced by repeated injections of the extract. Ott and Scott[7] found that in goats during the early nursing period intravenous injections of posterior lobe extracts would greatly increase the secretion of milk. Feeding both the fresh and dried pituitary substance to animals has been done by a number of investigators, but no positive conclusions can be drawn from the work thus far done.

As stated before, the pituitary body is essential to life. Marinesco[8] first showed that extirpation of the pituitary body in cats was followed by death in a very short time. Results of a contradictory nature to those of Marinesco were reported by a number of observers, but owing to the fact that the technic for the removal of the pituitary body was unsatisfactory up to the time of Paulesco's work, previous results must necessarily have little value. Paulesco[9] showed not only that the extirpation of the whole pituitary body was fatal, but also that the anterior lobe alone was responsible for this termination, removal of the posterior lobe giving negative results. By manipulation of the hypophyseal stalk, Goetsch, Cushing and Jacobson[10] could produce a transient hyperglycemia which would for the next few days result in a lowering of the assimilation limit for injected carbohydrates. If a permanent insufficiency of the posterior lobe secretion were produced, the temporary lowering of the assimilation limit would be followed by an abnormal augmentation in the tolerance for sugars, which could promptly be lowered by the subcutaneous injection of posterior lobe extract. There was also a tendency toward the production of generalized adiposity. Repeated injections of posterior lobe extract in the normal animal were apt to lead to a profound degree of emaciation together with a lowered carbohydrate tolerance.

The introduction of pituitary extract into therapeutics was brought about by Bell and Hick,[11] who first suggested it as a uterine stimulant. They also advocated its use in cases of shock and in paralytic distention of the bowel. Bell[12] later found that the extracts seemed to act more efficiently when there was considerable atony and paresis than in normal conditions. Since the work of these investigators, pituitary extract has been extensively studied clinically. Foges and Hofstätter[13] found "Pituitrin" especially valuable in post-partum hemorrhage. Klotz[14] reported remarkably successful results from it in the treatment of rickets. Spire and Parisot[15] obtained good results from an extract of the whole gland in delayed labor and in causing micturition in retention. Citelli[16] used it to prevent operative hemorrhages of the upper air-passages. Ever since the association of acromegaly with disease of the pituitary body, extracts of the whole gland have been administered for that condition on the theory that the disease was due to a deficiency of normal secretion, the results of its use being as a rule indefinite.

In striking contrast to the earlier clinical reports of its use in labor are those of more recent origin. Herz[17] reported a case of rupture of the uterus after "Pituitrin" administration, the os having been partially dilated at the time of its use. Rongy and Arluck[18] after a very extensive clinical experience with "Pituitrin" in obstetric practice, have concluded that extravagant claims were made for it in the induction of labor, and that it should never be used unless a general anesthetic is within easy reach, for the contractions may become so violent that rupture of the uterus is imminent. They personally knew of two cases of rupture of the uterus which resulted from its use. Sheffield[19] has reported a case of poisoning to the new-born from pituitary extract apparently through its mother's milk. Other observers have reported the occurrence of collapse, tetanus of the uterus, asphyxia of the child, and premature separation of the placenta after pituitary extracts.

Either anterior, posterior or whole-gland preparations are used in therapeutics. They can be given by any of the usual methods of administration, although the subcutaneous method is to be preferred. Biedl[20] has described unpleasant symptoms as a result of their intravenous use, namely, nausea, accompanied by the desire to micturate and defecate.

From this short survey of the clinical literature it will be seen that while infundibular extract is relatively non-toxic it does possess a high degree of toxicity in certain cases and so extreme caution should be taken in its administration. It likewise becomes very essential that pituitary preparations be standardized to insure constancy in their dosage.

Little is known concerning the chemical nature of the pituitary body. Various substances have been isolated from either the whole gland or posterior lobe

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extracts; but while they may be regarded as active substances they are not generally regarded as the active principle in the same sense as epinephrin represents the activity of the medulla of the adrenal gland.

No generally accepted method of evaluation exists for the determination of the activity of posterior lobe extracts, but two physiologic methods have been suggested which are now used to a limited extent, namely, the determination of the effect on the blood-pressure and the effect on the isolated uterus, the former method being an application of the well-known physiologic method used in the standardization of epinephrin, while the latter is an equally well-known method which is in use in certain laboratories for the biologic assay of ergot. The credit for the application of the former to pituitary standardization properly belongs to Hamilton,[21] for the latter to Dale and Laidlaw.[22] These two methods, therefore, were used in the examination of the preparations which are reported in this paper.

For the determination of the rise in the blood-pressure dogs were used, the method being similar in every respect to that employed for the physiologic assay of epinephrin. The dogs varied in weight from 5 to 10 kg. They were anesthetized with chlorbutanol (0.45 gm. per kilogram per stomach), the vagi were cut, and the injections were given either by way of the external jugular or femoral vein. Artificial respiration was employed in all of the experiments. The pressure readings were taken from the carotid artery.

Inasmuch as there is no standard required, the standard selected against which all the others were tried was one of the strongest preparations. As a rule only one preparation was compared with the standard in a single experiment. Various dilutions were tried, and when a dilution of the sample under consideration was found which would produce the same rise in the blood-pressure as that of the standard, a ratio was then established and the relative strengths of the two preparations would be determined. For example, if 6 c.c. of a 1:10 dilution of a certain preparation produced the same rise in pressure as 6 c.c. of a 1:50 dilution of the standard, the sample examined would be one-fifth as strong as the standard. In many respects the blood-pressure tracing resembles that caused by epinephrin. In the dog, if a small dose of infundibular extract is injected intravenously, there results a prompt rise in the blood-pressure which is well sustained, usually for from five to fifteen minutes, but occasionally the return to normal does not occur for half an hour. If a second injection be given shortly after the first there is a diminished response, the rise being less than before. This can be overcome to a certain extent by allowing about half-hour intervals between injections and by using small doses. An injection given when the blood contains a large amount of the extract, such as occurs toward the end of an experiment, may produce a slight fall instead of the usual rise.

In the isolated uterus method a uterine segment from a 275 to 350 gm. virgin guinea-pig is selected and placed in oxygenated Locke's solution kept at 39 C. (102.2 F.). One end is made fast to a stationary glass rod and the other to a light straw writing-lever. After about half an hour rhythmic contractions appear and a record of the contractions is then obtained on a slow-moving smoked writing surface.

For use as a standard a 1:20,000,000 solution of beta-iminazolylethylamin hydrochlorid was used which was obtained from the Hoffmann-La Roche Company. This is a histidin derivative which in a very dilute solution causes contraction of the isolated uterus. A 1:1,000 solution of it was made, put into sterile ampules which held a little over 1 c.c. of solution and subsequently sterilized fractionally. A fresh 1:20,000,000 solution made from the sterilized 1:1,000 solution was used as a standard in each experiment. The contraction which was caused by the specimen to be examined was compared with that caused by the standard. Various dilutions were tried until one was found that produced the same contraction as that caused by the standard. If a 1:10,000 dilution of one sample and a 1:2,000 dilution of another produced the same contraction as that caused by the standard, the former would then be considered to be five times as strong as the latter.

By these two methods six samples which were obtained from six different manufacturers were examined. They will be designated as Samples A, B, C, D, E and F. They were all purchased on the open market and in original packages. The preparations were liquid and were made from the posterior or infundibular lobe. They were dispensed in sterile glass ampules containing from 1 to 1.3 c.c. of a clear liquid which was acid to litmus except in the case of Sample E, which was alkaline to litmus. Sample A contained as a preservative 0.005 gm. of chlorbutanol in each cubic centimeter.

By the blood-pressure method the samples gave the relative values shown in Table 1. Sample E was practically devoid of pressor effect on the circulatory system even when large amounts were given, so that it was impossible to standardize it by this method.

TABLE 1.—RELATIVE VALUES OBTAINED BY THE BLOOD-PRESSURE METHOD

Sample	Ratio as Compared with Sample A
A	15
B	15
C	3.8
D	1
E	?
F	7.5

By the isolated uterus method the relative values were obtained as indicated in Table 2.

TABLE 2.—RELATIVE VALUES OBTAINED BY ISOLATED UTERUS METHOD

Sample	Concentration Necessary to Produce a Contraction Equal to that Caused by the Standard	Ratio
A	1: 15,000	7.5
B	1: 15.000	7.5
C	1: 7,000	3.5
D	1: 2,000	1
E	1: 2,000	1
F	1: 8,000	4

When a comparison of the two methods is made it is seen that Samples A and B are the strongest by both methods and that D and E are the weakest. A wider difference between the samples is shown by the blood-pressure method than by the isolated uterus method.

The reason for such great variability in the activity of the preparations is quite obscure. A possible cause for this variation might be found in the fact that the infundibular substance was collected from various animals. On inquiry it was found that A, B, C and E were collected from cattle, and D from sheep and cattle, while F was obtained from horses and cattle. This might account for the variation between A and F, for example, but not for the marked difference in activity between A and E, since these two preparations were both made from cattle pituitary. In the case of Preparations A, B, C and E, two possibilities suggest themselves: either the methods of manufacture differed radically, or the pituitary substance itself possessed great variability.

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[21] Hamilton, H. C.: Jour. Am. Pharm. Assn., 1912, i, 1117.

[22] Dale, H. H., and Laidlaw, P. P.: Jour. Pharmacol. and Exper. Therap., 1912-1913, iv, 75.

CONCLUSIONS

1. Attention is directed to the wide variability that exists in the activity of commercial pituitary extracts.
2. The use of beta-iminazolylethylamin hydrochlorid in 1:20,000,000 dilution is suggested as a standard for use on the isolated uterus of the virgin guinea-pig.
3. The blood-pressure method shows a wider range of variability than does the isolated uterus method for the comparison of the relative activity of pituitary extracts and is not applicable to all preparations.

Hygienic Laboratory.

ABSTRACT OF DISCUSSION

Dr. Solomon Solis-Cohen, Philadelphia: These studies are of great importance not only clinically but also as a question of public policy, namely, the establishment of a standard for pituitary preparations which can be incorporated in the forthcoming revision of the United States Pharmacopeia. The commercial preparations vary in activity not only as compared with one another, but also as regards the product put out by any one manufacturer at different times. Was only one set of specimens examined from each manufacturer or were preparations tested which were produced at different times? I have used these preparations for a number of years and believe that this variation accounts for some therapeutic failures. A definite and authoritative standard is necessary, so that, knowing what to expect from a given preparation, we can better regulate the dosage both in quantity and in time. Further, did Dr. Roth find any distinct tendency toward the production of immunity? In the observations I reported some years ago on the effect of preparations of the posterior pituitary lobe, I found that when it was administered by the mouth no antibody could be demonstrated in the blood, but when it was given by hypodermatic injection over a period of several days, an antibody finally appeared. The tests were made by experts in laboratory technic. This is a clinical fact to be considered, especially with regard to dose, to time and therapeutic effects.

There are two groups of cases in which I have had gratifying results: first, in certain forms of angioneuroses, angioneurotic edema, urticaria, asthma, etc., and in that greatest of all autonomic disorders, Graves' syndrome—miscalled exophthalmic goiter, or hyperthyroidism—also in true hyperthyroidism; secondly, in acute lobar pneumonia, in which I now use it almost routinely. I should be loath to treat a case of either croupous or catarrhal pneumonia without having a trustworthy preparation at hand. At Jefferson Hospital we made some comparative observations of three or four different products and also compared them with epinephrin in their clinical effect on separate patients and on the same patient from time to time—both in cases of active pneumonia and on convalescents apparently normal. We did not find, in the preparations we were using then, any considerable difference in effect—that is, in elevation of systolic blood-pressure—between two American preparations and one foreign; nor did we find any material difference between the actual rise of blood-pressure caused by the use of the pituitary preparations and that caused by the epinephrin solution; but we did find that the pituitary effect was more lasting. Still another important clinical use of the pituitary preparation is in the control of tympanites. I have not often used it in typhoid fever because I do not see much tympanites in typhoid under my routine use of the cold-water abdominal coil, but in the tympanites of pneumonia it has proved useful frequently. A large dose is necessary and must be repeated promptly and sufficiently often. In routine treatment the pituitary preparation is repeated every three or four hours as indicated by the blood-pressure, but when tympanites has developed it should be repeated hourly or even half-hourly for three, four or more successive doses, intramuscularly or hypodermatically. In some cases of chronic urticaria the use of the pituitary preparation once a day is sufficient. In others it must be used three or four times daily for a week or more.

Dr. George B. Roth, Washington, D. C.: It seems as though there is a mixture of substances in pituitary extracts. Now the preparations A (American) and B give very little depressor effect. This depressor effect is difficult to obtain from A and B while it is easy to get from D and E (foreign) so that they would show a qualitative difference. With regard to Dr. Cohen's question: I am more familiar with the literature than my paper indicates and I know of his work. As to immunity—the uterine segments do not all react in the same way and it appears as though some possess immunity; also some dogs react to a less degree to these extracts than other dogs but as to the animals being immune I can not say. In the uterine-segment method, however, with repeated administrations you get rather an increased irritability. Duplicate tests were made in a, c, d, e and f but not in b. Some of the duplicate preparations were obtained about two months apart and showed the same activity.

A CASE OF MYIASIS AURIUM ACCOMPANYING THE RADICAL MASTOID OPERATION *

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PHILADELPHIA

The following case is thought to be of sufficient interest to justify a brief report:

L. H., aged 14, is a student in the Pennsylvania Institution for the Blind in Philadelphia. When 4½ years of age, following scarlet fever, he lost the sight of both eyes and developed a double chronic suppurative otitis media, which in time destroyed the hearing in his right ear and so impaired that of the left that the loud-speaking voice could be heard only at a few inches' distance. He has been under my care for the last five years, during which time the discharge of pus has not materially decreased; for during vacation time in summer he is accustomed to go to his home in the country, where he gets no treatment or care at all and so loses what improvement he has made during the winter.

A radical mastoid was proposed several times, although not urged on account of his blindness and the very little hearing power remaining. It was always refused until this summer, when symptoms of cholesteatoma became marked and consent to the operation was finally obtained. At the time of the operation, which was done in the Pennsylvania Hospital, the mastoid process was found to be extensively excavated by cholesteatoma and a sinus had opened from the enlarged cavity of the antrum into the posterior wall of the external canal. Ossicles and tympanic membrane had long since disappeared, and a thorough and carefully complete radical operation was done. The posterior incision was closed completely and the cavity packed through the meatus with plain sterile gauze. Aseptic technic was careful and painstaking throughout. As the boy made a good recovery from the ether and the temperature was normal, the packing was not removed until the third day. On the removal of this packing there was a bad stench and some forty or fifty small maggots came away with the gauze or were washed out immediately afterward. The ear was this time packed with iodoform gauze, which was changed

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* Read at the meeting of the Philadelphia Laryngological Society, Oct. 29, 1912.

daily for a week and then omitted altogether, and no more larvae were seen, the patient making an uneventful recovery, with hearing, for a time, at least, very much improved.

The patient had spent the summer on a farm in central New Jersey, sleeping practically out of doors and living in a very rough fashion, and entered the hospital Thursday, Aug. 22, 1912, being operated on Friday, so that I had not seen him personally since the preceding June, until on the operating-table. The ear had been douched in the ward without any maggots being discovered, nor were any seen at the time of the operation.

I suppose that most otologists of experience have seen cases of myiasis or maggot infection of the middle ear or external canal among dispensary patients in whom there has been great neglect of cleanliness, although it seems to me that they are less frequent than formerly, it having been several years now since one came under my observation. The only interest in the case here reported lies in the fact that it accompanied the radical mastoid operation, and the query as to how it occurred.

According to Gould,[1] the term "myiosis" was first applied by Hugo Summe to diseased conditions produced by the presence of the larvae of dipterous (two-winged) parasites. It is known in the East as peenash. Gould further states that "myiasis" is a corruption.

An inquiry addressed to the Bureau of Entomology, Department of Agriculture, brought the information that, in all probability, the infection in this case was caused by the so-called Texas screw-worm fly (*Lucilia macellaria* or *Compsomyia macellaria*), and the report stated that "this fly often deposits its maggots in open wounds and even in the noses of persons sleeping, especially of those afflicted with purulent catarrh. It also lays its larvae upon wounds on cattle, especially in the West."

Lucilia macellaria (Robineau-Dessoidy, 1830), or Texas screw-worm fly, has its habitat from Canada to Argentina, but its ravages are most common in the West and South. Its genealogy[2] is as follows: Tracheata, Hexapoda (six-footed insects), Diptera (Two-winged), Muscidae (house-fly and its allies).

These flies are divided into two classes by Blake,[3] who in 1872 reported three cases of myiasis aurium. One was due to the larvae of *Muscida sarcophaga*, and two to those of *Lucilia macellaria*. He describes the first as being of the viviparous variety in which the young are brought forth alive, while the second two are oviparous, in which the larva is hatched from the egg deposited by the parent fly.

Britton[4] in 1883 stated that the larvae of the screw-worm fly are fleshy, footless grubs which require moisture for their hatching and development. The eggs are deposited in wounds or decaying animal-matter. When deposited in living bodies, very severe symptoms may ensue from the boring of the larvae into the tissues by means of the nippers which are attached to the head and from which they take their name. Even bone may be pierced in this manner. Many cases of human myiasis have been reported from South America since the disease was first noted by Azosa. The most common places for the deposit of the eggs, according to these reports, are the noses and mouths of sleeping persons.

The grub of the screw-worm fly, according to Richardson,[5] is one of the smaller species. From three to four hundred eggs are deposited by the parent fly at one time and in a few moments. These eggs are cylindrical, about 1 mm. in length, and white. It is said that they hatch in from one to twelve hours, and that no living larvae are deposited. Richardson describes the larva as being a whitish, footless, slender and very active maggot that matures in five or six days. The pupal stage is passed in the ground in which it has buried itself, and from which it emerges in from nine to twelve days as the mature imago or fly. The larvae of this fly are very similar to those of the *musca domestica* or common house-fly, as pointed out by Skinner.[6] He states also that the term "fleshy" used above is in contradistinction to the "skin-like covering" that some forms of maggots possess.

In reviewing this case of myiasis in the cavity of a radical mastoid operation, several difficulties are at once encountered. Of course the point of interest is, How came the maggots where they were found? My first thought was that the wound must have been infected at the time of operation, or that the dressings were infected. That this was not so I was soon convinced for the following reasons:

1. The operating-room was carefully screened and no flies were observed.

2. Had there been any they could not have ovideposited during the operation.

3. Flies never ovideposit on such substances as sterile dressings, always selecting putrid or decaying material in order that the young, when hatched, may have a supply of food at hand.

If, as seemed likely, the eggs were received while the patient was sleeping in an unscreened hut in the country immediately before his arrival in the hospital, they would have hatched into larvae before the time of the operation, and if so, where, with the painstaking technic employed, could forty or more of them, either eggs or maggots, small though they might be, have been hidden? Nowhere but in the nose, nasopharynx or eustachian tube, I should think, and from there, they might have migrated to the wound cavity; but this theory is not very satisfying. Even if the eggs were laid after the patient's arrival in the ward and but an hour or two before operation, it is hard to see how so many could have escaped to develop subsequently. That they could not have been deposited after the dressings were applied is almost certain, as the fly could not have penetrated the usual well-bandaged gauze dressing, nor would there have been much incentive for her to do so. I find that it is a common belief that one maggot can multiply itself into numbers without going through the full cycle of its life-history. If this were true the presence of these parasites in the numbers found could be easily accounted for, but needless to say, this theory is a myth.

In a search of the literature no similar case could be found, and but few references to the subject of myiasis in general, the standard text-books either omitting all mention of it or dismissing it in a few words. And as it will undoubtedly be a much more rare disease in the future than it is even now, it was thought that this brief report would not be without interest.

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[1] Gould, G. M.: Dictionary of Medicine, 1900.

[2] Insects Affecting Domestic Animals, Bull. 5, Bureau of Entomology, Dept. of Agric., 1896.

[3] Blake, C. J.: Three Cases of Myiasis Aurium, Arch. Ophth. and Otol., 1872, ii, No. 2.

[4] Britton, J. B.: Tr. Southeast Kansas Dist. Med. Soc., 1883.

[5] Richardson, Joshua: Screw-Worm Fly and its Ravages, Med. Month., Peoria, Ill., February, 1883.

[6] Skinner, H.: Life-History of Some American Insects that Carry Disease, Pennsylvania Med. Jour., September, 1912.

HARMFUL EFFECT OF CERTAIN SUGAR-CANE PRODUCTS

A PRELIMINARY REPORT

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Many dietary experiments have been made for the purpose of determining whether or not the use of cane-sugar is deleterious. The results of these experiments have failed to prove that any harmful effect follows what is termed a moderate use of sugar. Such experiments, however, should not be applied to the effect of sweet foods in general, because they do not take into consideration certain other derivatives of sugar-cane which are present in brown sugar, yellow sugar and sugar-cane sirup and are consumed in the form of candies, cakes, soft drinks and sirups.

We find nothing in medical literature bearing directly on this point. The writers who have observed harmful effects following the use of sweet foods have not specified the particular form of sweet, but have referred to them as a class. Deeks,[1] writing from the Canal Zone, made a wholesale condemnation of "sweet and starchy foods," especially as to their use in the tropics. Kerley[2] of Brooklyn reported on seventy-eight patients whom he termed sugar susceptibles, characterized by recurrent or persistent forms of the following diseases: head-colds, bronchitis, asthma, vomiting, urticaria, rheumatism, chorea and eczema. His treatment of these cases consisted mainly in the entire exclusion from their diet of everything containing sugar.

In 1912, while making a study of the dietetic habits of patients suffering with chronic stomach and intestinal disorders, I was much impressed with the following case history:

B. C., man, aged 34, traveling drug salesman, states that at the age of 8 years he suffered an attack of what was termed delirium tremens which was attributed to the use of brown sugar. His father, a grocer, had allowed him free access to the sugar-barrel and for some time he had been eating it freely between and during meals. The attack of delirium lasted three or four days and was so violent in character that he had to be "held in bed." Following this he was not allowed to have any more brown sugar and has not had a recurrence of the delirium.

This history suggested to me that the unrefined or partially refined products of sugar-cane contain some poisonous or deleterious substance which, being non-crystallizable, is not present in the fully refined product, granulated sugar.

EXPERIMENTAL ADMINISTRATION OF SUGAR-CANE SIRUP AND GRANULATED SUGAR

In order to determine the effect of these non-crystallizable solids of sugar-cane when taken regularly as a part of the diet, the experiment of feeding sugar-cane sirup to a dog was made. A cheap grade of this sirup was selected because it contains the highest percentage of the sugar-cane extractives and the lowest percentage of sugar, most of the latter having been removed in the process of refining. At first only a small amount of the sirup was given, three times a day, but this was gradually increased, thus developing a sweet habit in the same manner that it is developed in a human being; no attempt was made to force the consumption of sirup beyond what the appetite of the animal seemed to demand. Throughout the experiment as much other food was given as the dog would eat. It will be seen that an experiment of this kind differs very materially from those dietetic experiments in which an animal is allowed only a single article of food, as rice, corn, oils, etc., and in which the question of dietetic imbalance, especially protein starvation, must be considered.

During the same time that one dog received the sirup, another dog was given an equal amount of sweet in the form of granulated sugar. Both dogs were given a generous and well-balanced diet in addition to their sweet ration. The object in giving the one dog sugar-cane sirup and the other granulated sugar was to compare the effect of the two forms of sweets; also, in case harmful results followed the administration of the sirup but not the sugar, such results could not be attributed to the mere addition of sweet food to the dog's diet or to an unbalanced diet, but to some ingredient of the sugar-cane.

DETAILS OF EXPERIMENT

Two female puppies from the same litter, 6 weeks old and weighing approximately 2 pounds 14 ounces each, were selected for the experiment.

Dog 1 was given, three times a day, 1 dram of a cheap grade of sugar-cane sirup, mixed with other food. This was gradually increased until at the end of the second month 4 drams was being given three times a day; from this time on the amount was increased only slightly, and after the third month the amount of sirup given daily averaged slightly less than 2 ounces.

Dog 1 on left; Dog 2 on right.

Dog 2 was given the same amount by measure of cane-sugar. Making allowance for the water in the sirup, the amount of solids in the two forms of sweets was about the same.

The experiment was continued six months.

Effect on Weight.—At the beginning Dog 1 did not gain weight as rapidly as Dog 2, and at the end of two weeks the latter was 13 ounces heavier (the first dog, 3 pounds 10 ounces, the second dog, 4 pounds 7 ounces). Dog 1 then began to gain more rapidly and at the end of the first month their weight was the same (7 pounds 8 ounces). At the end of the tenth week Dog 1 was slightly heavier (Dog 1, 8 pounds 9 ounces, Dog 2, 8 pounds 6 ounces). From this time on to the end of the experiment, Dog 1 gained more slowly than Dog 2, and at the end of the sixth month there was more than 3 pounds difference in weight (Dog 1, 18 pounds 5 ounces, Dog 2, 21 pounds 12 ounces).

Effect on Bowels.—Moderate looseness of the bowels was noted in Dog 1 during the first few weeks but without any considerable change in the character of the movements. Later the movements became decidedly abnormal in character and by the end of the second month they were liquid or partly liquid, generally dark gray and offensive, from two to six or occasionally more a day, and this condition continued to the end. Dog 2 showed nothing abnormal.

Effect on Strength.—Almost from the first Dog 1 showed a lessened strength and endurance, as compared with Dog 2, and evinced a preference for sitting or lying down a good part of the time, but at no time was so sick or weak as to fail to come when called, except during a temporary withdrawal of the sirup as described later.

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[1] Deeks, W. E.: The Carbohydrate Diathesis, Med. Rec., New York, Oct. 8, 1910.

[2] Kerley, Charles G.: Cane-Sugar in its Relation to Some of the Diseases of Children, Arch. Pediat., October, 1907.

Effect on Development.—The most striking result of the experiment was the effect on the muscular and bony development of the dog receiving the sirup. There was an extreme softness and flabbiness of the muscles, comparable to the condition of a patient in the last stages of a serious illness. The bone development in Dog 1 was much less rugged than in Dog 2, especially noticeable in the narrowness across the chest and shoulders of the former as compared with the latter.

Effect of Discontinuing the Sweets.—During the last month of the experiment the sirup and sugar were discontinued for one week. Dog 1 became so ill as to refuse to leave her house or take food. On being given a laxative and resuming the sirup diet she soon became as well as before. The change in diet had no apparent effect on Dog 2.

At the end of six months the experiment was terminated. Dog 2 appeared so active and vigorous—and had at all times from the first—that the effect of the addition of the cane-sugar to the diet was considered negative.

PATHOLOGIC REPORT

In a post-mortem examination of Dog 1, the organs found to be mainly affected were the intestine, liver and kidneys. Sections of these organs, which were examined by Dr. John Funke, showed the following changes:

Intestine.—Necrotic areas, at some points reaching to the submucosa, involving the agminated and solitary lymphoid structures.

Liver.—An abundance of cellular infiltration of the interlobular and intralobular structures. Few normal liver-cells could be found; vacuolization of the protoplasm due to a deposit of fat within the liver cells. Clearly a beginning intralobular cirrhosis.

Kidney.—Many tubules lined with epithelium which is swollen, granular and blurred, at some points occluding the lumen of the tubules; evidences of irritation much less pronounced than in the liver.

SOME SUGGESTIVE FACTS

While sugar-cane products were scarcely used at all a hundred years ago, they are now used in enormous quantities, and their consumption is increasing faster than ever before. This fact alone certainly seems to require investigation since it indicates that these products differ in some essential way from other foods.

The theory that sugar-cane products are habit-forming is suggested by the following fact:

If a child is allowed all the candy it wants it will eat increasing quantities from day to day and will in time develop an enormous craving for sweets, largely to the exclusion of other foods. A habit is thus formed which will be difficult to break up since a withdrawal of the customary allowance of sweets is followed by a reactionary depression and craving.

The injurious effect of sweets on the teeth is a matter of such wide-spread observation and belief that it must have a foundation of truth, but has never been satisfactorily explained. Experimental attempts to demonstrate that sweets cause decay of the teeth by some local action in the mouth have given negative results; that this decay is due to their constitutional effect seems reasonable in the light of the serious lesions which they produce in the liver and intestines and their profound effect on nutrition, as shown by the foregoing experiment.

New Instruments and Suggestions

A NEW SIMPLE STETHOSCOPE

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The stethoscope which I have devised intensifies the audibility of sounds without changing their character. It consists of a set of resonators of different sizes, which are adapted to be detachably connected to a hollow, curved Y-tube that serves as a handle and also as a connection for the ear-pieces. The resonators are so constructed that they can be nested together and combined with a member which cooperates with a resonator of greater diameter to form a protecting cover for other resonators that are nested inside.

Each resonator, A, A¹ and A², is cup-shaped, with a flat top wall, and is preferably formed from metal, although some other suitable material which has a certain degree of resonance would do as well. The opening from the top wall of each resonator, *2a*, communicates with opening 1a of the device *B*. The resonator is connected to the handle *b* in such a manner that it can be easily disconnected, thereby enabling the same connecting member *B* to be used with different-sized resonators. When the rim of the cup-shaped resonator is placed in contact with the patient's chest, the air which is trapped inside of it is set in vibration by the vibration waves of the chest wall. These vibrations are taken up in unison by the resonator itself. Consequently, the sound waves are intensified and transmitted through the hollow connecting device *B* and thence to the ear-drums through the ear-pieces *C*.

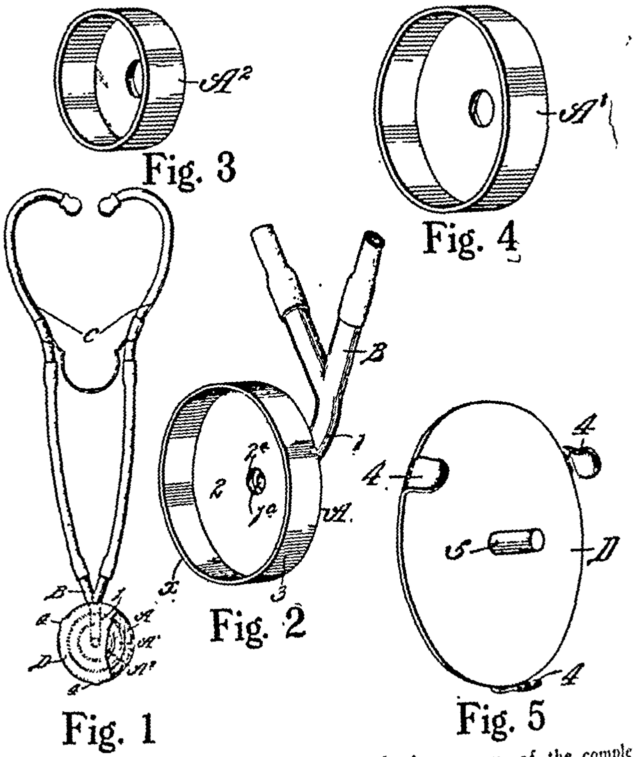

Fig. 1.—View, front elevation, partly broken away, of the complete instrument.

Fig. 2.—Perspective view, showing the large resonator mounted in operative position with the combined handle and connecting member.

Figs. 3 and 4.—Perspective views of the smaller resonators.

Fig. 5.—Perspective view of the cover member.

The cap member, Figure 5, consists of a disk that is provided with several spring fingers that lap over the flange or rim of the large resonator, as shown in Figure 1, thus holding the cap member in position. This cap member is provided with a stud, or guide, in the center that projects through the center openings of the resonators, A¹ and A², and thus holds them in position in the enclosing shell, preventing them from rattling and moving around.

When the instrument is to be used, the cap member is removed and a resonator of the proper size is then secured to the connecting member *B*, the operator grasping the shank of the member *B* and using it as a handle to place the resonator in proper position on the body of the patient.

The small resonator, A^2, is especially adapted for auscultating children, localizing heart-murmurs, and in the auscultatory method of taking blood-pressure.

An instrument constructed as described above can be sterilized, because it has no parts that are damaged by water or excessive heat, such, for example, as the hard-rubber diaphragms of the stethoscopes now in general use, or as the hard-rubber bells. Friction sounds are largely eliminated, because only the lower edge of the side wall of the resonator comes in contact with the patient's body. Furthermore, this instrument overcomes the necessity of a physician owning a number of complete stethoscopes of different sizes, owing to the fact that it comprises a set of resonators of different sizes that can be stored compactly.

606-608 Carleton Building.

TABLE ATTACHMENT FOR DOING SURGERY ON FACE, THROAT AND NECK

William M. Hayes, M.D., New Orleans

This apparatus is especially useful for cleft-palate work, enabling the operator to obtain a perfect Rose position (Fig. 1) without its being necessary for some one to support the head and shoulders. The head while in the basket portion can be turned from the right or left. The head and neck can be brought up or down as desired (Fig. 2).

For thyroid work it is ideal. Extension can be easily obtained and at the same time throws the thyroid gland up into view. This dispenses with the sand-bag placed under the back of neck. The head and neck are held firmly in position.

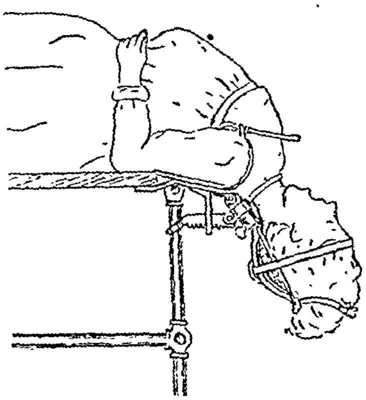
Fig. 1.—Patient in Rose position.

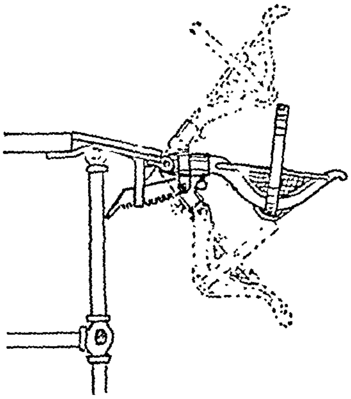
Fig. 2.—Different positions.

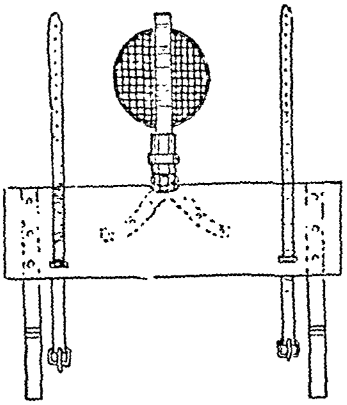
Fig. 3.—Top view.

The apparatus consists of a shoulder-plate the width of an operating-table. Attached to the under surface of the plate are two arms which go under the top of the table (Fig. 1). In each end of the plate is a slot through which passes a strap to go around the shoulders to support them.

A hinge-joint arrangement is attached to the under surface of the shoulder-plate, enabling the head and neck portion to be moved up or down as desired. The neck-piece is made of tubing which is fastened to the hinge-joint by a pin.

The basket portion is made of a piece of steel, which is curved to conform to the head (Fig. 1), and brass wire. The steel on which the basket proper is made ends in a stem which telescopes into the tubing which makes the neck portion.

A thumb- or set-screw as seen in Figure 1 holds the stem of the basket or head portion in the tubing. When the thumb- or set-screw is loosened, the stem rotates in the tubing right or left, or the neck portion can be made longer or shorter by pulling out or shoving back the stem into the tubing.

Around the tubing which makes up the neck-piece is a collar, to which is attached a notched lever which catches in a slot (Fig. 1). The slot is riveted to the under surface of the shoulder-plate. This notched lever is used to support the head and neck portion at any angle wanted (Fig. 2). A strap goes around the forehead if needed (Fig. 1). The strap is fastened to the basket and buckled over.

The anesthetist places the head and neck in any position desired by the operator.

1525 Calliope Street.

AN OPERATION FOR SHORTENING THE SCROTUM

R. L. Rhodes, B.A., M.D., Roanoke, Va.

Not infrequently associated with varicocele is a long, lax, pendent scrotum which in itself needs consideration, and unless dealt with properly these patients will not obtain complete relief from removal of the veins.

The operation most commonly employed is to clamp off and remove the redundant scrotum *en bloc*—the clamp being placed in such direction as is thought best.

The operation which I propose is not to use the clamp but to make the incision through the skin only, and this can then be readily dissected or stripped from the subcutaneous tissues. The incision may be elliptic, as when only one side of the scrotum is pendent, to shorten this side; or transverse, removing as much of the lower end of the scrotum as is desired; or following the line of the raphé extending on either side as wide as is desired. It may be closed in a straight line transversely or parallel with the raphé or in the shape of a cross (+) depending on the amount of skin denuded and the direction most desired to be abbreviated.

ADVANTAGES

1. It is an open operation with everything in full view of the operator, and therefore there is no possibility of doing any damage.
2. There is practically no bleeding—only a few oozing points which can be readily ligated.
3. It can be readily and painlessly done under a local anesthetic.
4. All the tissues beneath the skin are preserved. This is especially desirable as regards the dartos, which because of its elastic and muscle-fibers rapidly contracts following the operation, and forms a thicker, firmer and stronger support.
5. There is no postoperative discomfort.
6. The danger of postoperative hematoma is entirely eliminated because no large vessels are cut, and such as are cut are readily seen and ligated.
7. The scrotum is not opened, and therefore there is no possibility of carrying infection within—it being difficult thoroughly to cleanse and sterilize because of the tenderness of the scrotum.

A Simple, Practical Formaldehyd Sterilizer.—A sterilizer for certain diagnostic and dressing instruments, catheters, and paraphernalia that stand boiling poorly is not only a convenience but a necessity. The formaldehyd sterilizers on the market are efficient, look well, and are relatively expensive. I have found the following bread-box sterilizer satisfactory: A well-made box can be bought for less than a dollar; it should measure about 12 by 9 by 9 inches. Two sets of tin shelf-rests should be soldered in so that when the box rests on its back with its lid opening toward the front, the rests with their trays in place will give a three-compartment box. The trays are made from medium heavy ¼-inch wire mesh material which is faced and sided with tin. The total cost of this sterilizer will not exceed $2.50 instead of the customary $7 or $8. A box should be selected with a tightly fitting lid, if possible, but this defect can be somewhat overcome by the application of adhesive stripping around the narrow edge of the box over which the lid slips. The ventilation-holes should be covered with adhesive also. Powdered formaldehyd is exposed in a small dish which is set in the bottom compartment.

George Stacy, M.D., Jacksonville, Ill.

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SATURDAY, AUGUST 8, 1914

LIGHTING AND EYE-STRAIN

There is no organ of the body, outside of that limited group which is absolutely indispensable for the maintenance of life, which contributes more to human efficiency and personal comfort than does the eye. When we stop to consider the prolonged demands made on the organs of vision in these days of printing, and the shameful indifference with which their conservation is treated, it is surprising that they do not fail in their task more frequently than is actually the case. The muscular and nervous systems give a warning when they are called on in undue measure. Premonitory symptoms of fatigue or pain serve to prevent harmful overexertion. But our eyes rarely receive any studied consideration except at long intervals, and then usually under the pressure of impending damage to sight; nor are we concerned as a rule with any adjustment of the needs of the visual apparatus so as to relieve it of any unnecessary burdens or make its task easier of accomplishment.

It has recently been remarked that the goal of the lighting engineer has up to the present time been to get the maximum output of light for a given expenditure of energy. The lighting problem, however, has a very important relation to the eye. If the system of illumination is unsuitable it may speedily produce a loss of efficiency for continued work, and discomfort may likewise ensue. It is interesting to know that the industries concerned with the manufacture of lighting devices are recognizing the need of physiologists as a part of their scientific equipment. Commendable beginnings are being made in the effort to ascertain the merits of various lighting systems from the point of view of the individual rather than of the producing plant. In illustration of this we may quote freely from a recent report by Ferree[1] which represents progress.

The four types of lighting systems in common use to-day are: daylight, direct lighting systems, indirect systems and semidirect systems. The evenness of illumination and the proper diffuseness of the light with exclusion of all extremes of surface brightness are ideal conditions best realized at present in the proper illumination of a room by daylight. As Ferree points out, before it reaches our windows or skylights, daylight has been rendered widely diffuse by innumerable reflections; and the windows and skylights themselves, acting as sources, have a broad area and low intrinsic brilliancy, all of which features contribute toward giving the ideal condition of distribution stated above. The best distribution effects given by artificial lighting are obtained with the indirect systems in which the source is concealed from the eye and the light is thrown against the ceiling or some other diffusely reflecting surface. In the direct systems the tendency is to concentrate the light on the object viewed, and too often the eye is not properly shielded from the source of light. The semidirect systems represent a compromise in which a part of the light is transmitted directly to the eye through a translucent reflector, and a part reflected to the ceiling. Like most other compromises, this one is not ideal. We are assured that among the lighting factors which influence the welfare of the eye, those grouped under the heading "distribution" are apparently fundamental. The newest tests seem to indicate that where the light is well distributed in the fields of vision and there are no extremes of surface brightness, intensities bright enough to give a maximum discrimination of detail may be employed without causing appreciable damage or discomfort to the eye. We are further told that for the kind of distribution effects given by the majority of lighting systems now in use too much light for the welfare and comfort of the eye is being employed. Under many of the systems of direct lighting the eye loses greatly in efficiency as the result of three or four hours of work. In this time it loses practically nothing under daylight, and little more under good systems of indirect lighting.

It is interesting to learn that the difference of opinion regarding the effect of the quality of light on the eyes is quite as wide-spread among the experts as in lay circles. Ferree is not prepared to admit the common belief that colored light, such as is furnished by the kerosene flame, gives better results for seeing than white light. So far as visual acuity is concerned the clear tungsten lamps yield nothing to the carbon lamps which give a light comparatively rich in yellow. If it is true that the kerosene flame is easier on the eye than the more modern sources of illumination, Ferree is inclined to ascribe the benefit, whatever it may be, to the low intrinsic brilliancy of the kerosene flame; for, according to him, it may safely be stated that for the kind of distribution effects now obtained from most of our lighting systems, too much light is being used for the welfare and comfort of the eye. "Our problem in lighting at present is not so much how to see better as it is to see with more comfort and with less damage to the general health on account of eye-strain."

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[1] Ferree, C. E.: The Problem of Lighting in Its Relation to the Efficiency of the Eye, Science, July 17, 1914, p. 84.

STANDARDS FOR MILK

The first report of the Commission on Milk Standards, appointed by the New York Milk Committee, was published in the United States *Public Health Reports,* May 10, 1912. The second report of the commission was published in the same place, Aug. 22, 1913. At the annual meeting of the commission, held in New York in May of the present year, the commission decided not to make any changes in the classification of the report of the commission as contained in its last published report, but recommended that efforts be made by the New York Milk Committee looking toward the adoption of a classification and standards for milk by state, local and municipal health authorities.

At the recent session of the American Medical Association, the Section on Preventive Medicine and Public Health adopted a resolution endorsing the standards suggested by the commission. This resolution was referred to the House of Delegates, and, after having been considered by the Reference Committee on Hygiene and Public Health, was approved by the House.

Just previous to the meeting of the American Medical Association, the Conference of State and Provincial Boards of Health of North America unanimously adopted a resolution endorsing the standards and classification of milk along the lines suggested in the report of the commission, and urged the establishment of such uniform milk standards and classifications by state, municipal and local health authorities.

It is believed that the adoption of these resolutions, emphasizing as they do the interest for the establishment of milk standards and the classification of milk, will be of material aid in forwarding the campaign for pure milk now being waged throughout almost the entire country.

It is understood that the New York Milk Committee has under contemplation, in accordance with the suggestion of the Commission on Milk Standards, the inauguration of a campaign throughout the United States looking toward the adoption of uniform milk standards and classifications.

There are at present pending before the courts, in various sections of the country, cases against milk-dealers for selling milk containing large numbers of bacteria. One of the points that has been raised by the defense has been that the standards proposed by the Commission on Milk Standards have not been endorsed by representative bodies. The fact that the report of the commission has received the endorsement of the American Medical Association, the Conference on State and Provincial Boards of Health, the American Public Health Association and the American Veterinary Association absolutely demolishes this argument.

There is probably no single factor proposed for the control of milk-supplies that is of greater assistance to the authorities in forcing dealers to sell a safe and pure milk than is the adoption and enforcement of bacterial standards for milk. One of the arguments that has been raised by opponents of bacterial standards for milk has been that it is not the number of bacteria, but the kind of bacteria that is of harm, and the statement is made that a few typhoid bacilli are of infinitely more harm than millions of lactic acid organisms. These statements are, of course, true; but the number of bacteria in a milk undoubtedly gives valuable information as to the conditions under which that milk was produced, how it has been handled and how it was kept as regards refrigeration.

The adoption by public health authorities of standards such as those proposed by the Milk Commission and endorsed by the American Medical Association, modified to suit local conditions, will be a potent factor in advancing the cause of pure milk in the United States.

NERVOUS OR EMOTIONAL GLYCOSURIAS

In discussing recently[1] what has been termed the "emergency function" of the adrenal glands, attention was called to the fact that severe emotions, exemplified in fear, rage and pain, are accompanied by an increased discharge of epinephrin into the blood. The hyperglycemia and the epinephrinemia are both due to nervous discharges. Evidences on record show that these effects may be sufficiently intense to lead to the usual consequence of increase in the sugar-content of the blood, namely, glycosuria. That experimental procedures attended by pain result in the appearance of sugar in the urine was demonstrated many years ago. That pure emotional excitement — fear or rage — will have the same effect was proved when Cannon, Shohl and Wright[2] obtained glycosuria in cats by placing them in small cages and permitting dogs to bark at them. Whether or not glycosuria appeared promptly depended on the animal's emotional reaction to the experience. A positive result was not obtained, furthermore, when the adrenals had previously been removed.

It is not unlikely, in view of the experimental findings now on record in the study of animal behavior, that emotional glycosurias are far more common in man than has been previously supposed. "Nervous glycosuria" is a familiar expression to the clinician. The fairly frequent occurrence of moderate glycosuria in the insane has long been known; and in view of the fact that a large number of such patients are subject to intense emotional excitement, Drs. Folin, Denis and Smillie[3] of the Harvard Medical School have accordingly raised the question whether or not many of the glycosurias occurring in the insane have a psychic origin. Mita[4] had already found sugar in the urine to be particularly frequent in patients subject to fear and depressions; and he suggested that there may be a certain relationship between glycosuria and the mental state independent of the more fundamental character of the mental disease. The Boston investigators found sugar in the urine of twenty-two out of one hundred and ninety-two patients examined at the McLean Hospital for the Insane. The great majority, but not all of those who exhibited glycosuria, suffered from depression, apprehension or excitement. Some of them had been in apparently the same condition with reference to the emotional state for several years. At the Danvers State Hospital for the Insane Dr. Bond found sugar in the urine in more than 8 per cent. of a large number of consecutive examinations made immediately after admission of the patients to the hospital, which would probably include a larger percentage of excited individuals.

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[1] Newer Views of the Functions of the Adrenals, editorial, The Journal A. M. A., July 25, 1914, p. 322.

[2] Cannon, Shohl and Wright: Am. Jour. Physiol., 1911, xxix, 283.

[3] Folin, O.; Denis, W., and Smillie, W. G.: Some Observations on "Emotional Glycosuria" in Man, Jour. Biol. Chem., 1914, xvii, 519.

As Folin and his collaborators remark, it is clear that the percentage of the insane having fairly conspicuous traces of sugar in the urine is very large; and if there is such a thing as emotional glycosuria in human beings, one would naturally expect to encounter it very frequently in this class of patients. Mentally normal persons are, furthermore, not free from strong emotional reactions on suitable occasions. That the physiologic sequences — presumably sympathetic stimulation and epinephrin discharge into the blood, with its consequences — are not missed under suitable conditions in sane man, is attested by the fact that Smillie[5] found glycosuria in four out of nine medical students (all normally aglycosuric) after a difficult examination, and in only one of the nine after an easy examination.

In another instance twelve out of twenty-five members of a university football squad were reported to have sugar in their urines immediately after the final and most exciting contest of the season.[5] At the Harvard Medical School 18 per cent. of thirty-three second-year medical students were found by Folin, Denis and Smillie[3] to have small, but unmistakable traces of sugar in the urine passed immediately after an important examination. From a comparable group of second-year women students at Simmons College, 17 per cent. of positive tests were likewise obtained. These facts, taken in connection with the previously discussed bearing of mental and emotional strain on the function of the adrenals give a new interpretation to a group of temporary glycosurias long known in clinical medicine, yet always obscure in their significance.

THE BRITISH NATIONAL INSURANCE ACT

Reference has been made in The Journal from time to time to the British national insurance act. The Journal has endeavored to set before its readers the progress of the passage and development of the act, feeling that while social, professional and economic conditions in the United States and England differ vastly, some valuable lessons could be learned from the experiences which our English professional brethren have undergone in the last three years. For a number of months past the London *Lancet* has published a series of articles by a special commissioner sent out by the *Lancet* to investigate the workings of the insurance act in different parts of England. In the *Lancet* for July 4 appears an interesting editorial summing up the conclusions drawn from this careful study of the operations of the act. According to the *Lancet*, it is clear that the working of the national insurance act, so far as the administration of the medical profession goes, is at present only partially satisfactory. Many of the objections raised to the act before its passage have been fully sustained by subsequent experience. The new law has benefited a certain number of physicians financially, and in many places the standard of contract practice has been improved over the conditions of club practice which existed previously. In other places, however, the special commissioner reports that the old and objectionable conditions of club practice remain practically unchanged. The administration of the act is, it is asserted, cumbersome and expensive, and a considerable amount of amendment and modification will be necessary before a smoothly working system is established. The *Lancet* says that the faulty conditions of club practice have reasserted themselves in panel work. The progress of the work under the act has fallen into the hands of a relatively small number of physicians instead of being evenly distributed. Some physicians have little to do under the act, while others have undertaken more than they can adequately perform. A distinct line of cleavage has arisen in the profession between panel and non-panel doctors, tending toward the creation of rich men's and poor men's doctors. The amount of sickness is suspiciously high in many places and the pecuniary strain on hospitals has been increased.

As an alternative to the present insurance plan, the *Lancet* discusses the proposition made by Dr. W. A. Brend in a recent article in the *Nineteenth Century and After,* advocating the establishment of a national medical service. Dr. Brend finds one of his strongest arguments for the establishment of such a service in the fact that under present conditions in England, the medical services available for the poor do not cover the field and are not of a satisfactory quality. As a remedy he suggests the establishment of a salaried medical service with local centers for medical treatment. He proposes a centrally placed building in every town of twenty thousand inhabitants or thereabouts.

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[4] Mita: Monatsch. f. Psychiat. u. Neurol., 1912, xxxii, 159.

[5] Compare Cannon, W. B.: The Emergency Function of the Adrenal Medulla in Pain and the Major Emotions, Am. Jour. Physiol., 1914, xxxiii, 359.

as a clinical dispensary, such a building to contain consultation and waiting rooms and a small operating room. In cities of more than twenty thousand, these buildings would be duplicated as the demand might require. Larger cities would have also a Roentgen-ray laboratory and a clinical-pathologic laboratory. Each district, under Dr. Brend's plan, would be divided into areas, and one salaried medical officer would be assigned to each area to take care of all the patients confined to the house, ambulatory patients being treated at the central clinical building. Each clinic would require the services of from five to eight whole-time, salaried, general practitioners with a chief medical officer for each clinic, and district officers and a central administrative staff.

Commenting on this plan and on the suggestion of Sir Clifford Allbutt for a ministry of health as a part of the national government, the *Lancet* endorses the latter proposition but is unable to see the necessity of transforming the medical profession into a state service in order to secure a health department in the government. Summing up the advantages of a state medical service to the medical profession, the *Lancet* holds that this should mean greater leisure to the individual physician for keeping abreast of new knowledge, opportunity for postgraduate study and for research work, regular working hours and holidays, and certainty of income; but it feels that the drawbacks to such a plan are as obvious as the advantages.

The English situation is interesting and instructive. In that country the demand for better health organization is coming from the people, and the medical profession is apparently the body which is withholding its endorsement. In this country, the organized medical profession has been committed for years past to the establishment of a national Department of Health, while the difficulty lies not so much in the opposition of the public as in its lethargy. Inasmuch as the establishment of a health department as a part of the national government, whether in this country or in England, would be entirely in the interests of the public, and as the labor of organizing and administering such a bureau would fall almost entirely on the medical profession without any immediate reward except to those comparatively few salaried officers necessary for its administration, it would seem reasonable to expect that the opposition, if any, would come from the medical profession rather than from the public. The explanation of the apparently anomalous situation is probably that in this country, the agitation for a national Department of Health was started by the medical profession before the public had come to realize the value or necessity of such a plan, while in England, public opinion on this subject is far in advance of professional opinion, so that the medical profession is the body which needs education in England, while the general public is the factor in need of enlightenment in this country.

INFANT MORTALITY IN THE PHILIPPINE ISLANDS

Certain anomalous features with respect to infant mortality in our Eastern insular possessions are not easily realized at first by any one accustomed to conditions in the United States or Continental Europe. We are told by the health authorities[1] that infant mortality in Manila is greater than it is in any other city from which we have records. This excessive mortality is not due to a single cause or to natural conditions of the country. There are a number of predisposing factors, prenatal and postnatal, as well as various immediate or active causes. Faulty nutrition is one of the most prominent.

It is said that in countries having the same degree of civilization the infant death-rate is remarkably constant, and this is probably accounted for by the similarity in the methods of feeding. Certainly where there is a difference in conditions a difference in mortality will be found. Thus, the mortality of infants fed on cow's milk has been shown to be from five to ten times that of those fed on mother's milk.[2] Ordinarily one would not hesitate to emphasize the desirability of breast-feeding for all children whenever feasible. The artificial (or what Schlossmann has termed the "unnatural") nourishment of the infant has not successfully replaced the natural feeding. This, in the words of an expert in this field, is the inevitable conclusion to which we must come, despite the great advances in our knowledge of foods and nutrition.

In the face of such teachings it is most surprising to learn from the report of Professor Musgrave,[1] of the College of Medicine and Surgery in the University of the Philippines, that the mortality in the breast-fed children there is higher than it is among children artificially fed. This condition seems to be peculiar to the Philippine Islands. The explanation is believed to lie in the deficient quantity and quality of mother's milk. The undernourished condition of many of the mothers, due to the ravages of disease, doubtless contributes to the deficiency in the quantity of breast-milk which has been observed repeatedly in the clinics of the large Philippine General Hospital. The ultimate hygienic aim must therefore be to correct the faulty nutrition of the mothers by education and wholesome reforms in diet. The immediate need, however, is for a food that will save the babies.

Here, again, unusual circumstances stand in the way of an ideal procedure. Next to mother's milk, which would unquestionably be the first choice under normal conditions, comes cow's milk. This substitute has considerable physiologic adaptability, and, furthermore, is the only milk that can be produced in quantities to meet the world's needs. At present, fresh, clean, raw, cow's milk is not obtainable in large quantities in the Philippine Islands. The milk production there is negligible in relation to the requirements of the country, and the prospect for a sufficient local production seems very remote. Herein, as Dr. Musgrave has pointed out, is a new problem in infant-feeding. The milk of carabaos and goats with that from a few dairies located in the larger cities at present constitutes the principal supply. Moreover, we are told that "practically all fresh milk produced in the Islands is dangerous to health, in whatever manner used, and the marketing of these products should be interdicted by law." We have commented on this situation in the past.[3]

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[1] Musgrave, W. E.: Infant Mortality in the Philippine Islands, Philippine Jour. Sc., Sec. B, Trop. Med., 1913, viii, 459.

[2] See Westergaard, Harald: Mortalität und Morbidität, Jena, 1901, p. 364.

The pressing problem, then, with respect to the food-supply for infants in the Philippines, is the introduction of the most suitable substitutes for fresh milk. In 1912 an equivalent of between 18 and 20 million kg. (about 40 million pounds) of milk was imported into the Islands. The opportunities for reforms are enormous. The products henceforth used should be suitable, inexpensive and economically procurable. The fact that a fertile field is offered for the exploitation of baby-foods calls for stringent supervision and a policy of education. Filipino mothers should be taught not to use contaminated water as a diluent of infant foods. The mixtures prepared for use by these mothers have been shown again and again to harbor dangerous bacteria in countless numbers. The almost universal custom of maintaining the greatest irregularity with respect to time of feeding and the quantity and character of the food administered to babies demands effective reform. We anticipate that the American health authorities in the Philippines, in conjunction with the growing group of native physicians educated under the American régime, will bring about lasting, wholesome changes leading to a conservation of infant life. When it is recalled that the present enlightenment in this direction has been of comparatively recent origin even in so-called culture states, the necessity for both patience and perseverance in meeting the situation described for the Philippines becomes apparent. The children cannot reap the reward at once.

It is sometimes asserted that infant mortality is but the operation of natural selection and should not be interfered with if we are to keep up the vital powers of the race. Preventive medicine has certainly prolonged the lives of infants or of children in general.[4] That a high infant mortality does not tend to produce a long-lived race, but rather to stunt all life, would seem to be indicated by the evidence collected in the Report on National Vitality prepared for the National Conservation Commission.[5] This shows that Russia, for instance, has a high infant mortality. If the statistics are to be trusted, it is 70 per cent. greater than in the United States; yet Moscow and St. Petersburg have a general mortality rate which greatly exceeds that of similar cities in this country. The commission's report further notes that perhaps the more unfavorable the struggle for existence the more rapidly will natural selection result in improved vitality. Even if this were true, however, it would not imply that in a more favorable environment selection would cease; and it may not be true. It is maintained by some that adversity, if too severe, will crush and injure the survivor as well as eliminate the weakling. We do not look for the best trees on the bleak mountain-top, but in the genial valley. As we go up the struggle for existence increases, until even the sturdiest fail to thrive above the "timber-line." The farmer who tries to improve his stock does not subject the animals to hardships. Cold and starvation are now almost unknown in the great ranches, and the breeds that were notable for ability to withstand them give way to varieties adapted to neither condition.[6]

Current Comment

DO THE RED BLOOD-CELLS CONTAIN PROTEOLYTIC FERMENTS?

A few years ago the possible function of autolytic processes in a variety of physiologic and pathologic phenomena was actively considered. It became evident that proteolytic enzymes are widely distributed in the organism outside of the digestive tract; and their presence was drawn on to explain certain manifestations of cell disintegration. The problem appeared in a new light, however, when it was found that various components of the blood contain proteolytic ferments. With respect to the leukocytes, for instance, there can no longer be any doubt on this point. Both the white cells contained in normal blood and those found in sterile pus exhibit undoubted proteolytic activity on suitable substrates. The blood platelets likewise are reported to manifest proteolytic enzymes.[1] Normal blood-serum is devoid of proteolytic power. The development of enzymes in it in an indirect way is, of course, the subject about which the widely discussed serum diagnosis formulated by Abderhalden has revolved. The topic has become the occasion for rather acrimonious argument in recent months and has not reached the stage at which calm judgment and positive conclusions prevail. There remain the erythrocytes for consideration with respect to their possible proteolytic equipment. Information is the more desirable because of the wide-spread distribution of the red blood-cells and the difficulty, if not impossibility, of excluding them from participation in many physiologic processes. Certain observers[1] have maintained that the erythrocytes can digest polypeptids; but Pincussohn and von Roques[2] of the Second Medical Clinic at the University of Berlin have lately demonstrated that the red cells, in the concentration in which they occur in the circulating blood, cannot digest tissues prepared as is customary in the proteolytic serum diagnostic methods of Abderhalden and tested with the now familiar ninhydrin reagent. Furthermore, the absence of autolytic changes in isolated erythrocytes speaks likewise for the absence of the usual proteolytic enzymes.

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[3] Milk in Manila, editorial, The Journal A. M. A., March 7, 1914, p. 782

[4] Graham, Edwin E.: Infant Mortality, The Journal A. M. A., Sept. 26, 1908, p. 1045.

[5] Fisher, Irving: Report on National Vitality, Its Wastes and Conservation, Bull. Committee of One Hundred on National Health, No. 30, July, 1909.

[6] Patten, Simon N.: The New Basis of Civilization, New York, 1

[1] Abderhalden, E., and Manwaring, W. H.: Ztschr. f. phys Chem., lv, 377.

QUIET PLACES FOR MEDICAL MEETINGS

The following letter, written by one of the leading scientific public health workers of the country, points the way in a greatly needed reform:

> It is not my desire to try to reform the world, and, in fact, I never do anything that I can get some one else to do. The latter clue gives you the purpose of this letter—to ask you to do something.
>
> I suppose that there are very few medical men in this country who attend as many medical meetings as I do. There is one point connected with at least one-half of all of the medical meetings I attend that renders this attendance practically a loss of time on my part. This point is a very simple one. It is this:
>
> The average medical meeting is held in a hall that is anywhere from three to ten times too large; it is usually in the noisiest part of the city that *can be found* so that the papers have a constant musical accompaniment of passing street-cars, railroad-trains, trucks, etc. It is usually in the noisiest building that can be found for fifteen miles around. As a result of this combination, it is impossible to hear half that is said in the meeting, and it is so much easier to go out in the lobby to chat than it is to sit in the room and strain one's ears trying to hear what is being said that it is a positive relief to get out of the room.
>
> The foregoing criticism is not made in a hypercritical spirit at all, but it is made from observations in all parts of the country. The average meeting is a bore for the simple reason that I cannot hear what is said. Will you not use your eloquent pen in an attempt at a reformation in this line? If you will do this, I will see that the future generations place you in the same category with Luther and other reformers.

The Journal is glad to give space to this criticism, not in the hope of securing a place in history with Martin Luther, or even a statue in the Hall of Fame, but because all of our readers who have attended many medical meetings will sympathize with the writer of the letter. One is often led to wonder, in attending a medical association meeting, why so many of those who go to the expense and effort of attending spend so little time in listening to papers or discussions. Our contributor has pointed out one reason. Certainly meeting-places should be selected and arranged so that those who desire to hear the papers and discussions can do so with the least possible effort. The selection of suitable meeting-places is of the greatest importance in determining the success of medical gatherings. And this applies, may we remark on the side, to the meetings of the Sections of the American Medical Association.

CARNOSIN IN MEAT

Physiologic chemists have long appreciated the fact that our knowledge of the composition of the extract of meat is far from complete. Muscle tissue in some guise or other enters extensively into the dictary of man. Aside from its richness in protein, meat is recognized to contain purin compounds (among which hypoxanthin is the most conspicuous), as well as the nitrogenous substance creatin regarding the metabolic history of which there is a lack of conclusive information. These components, along with the inorganic salts of the muscle by no means exhaust its yield of characteristic chemical compounds. A few years ago it was customary, owing to the prevailing ignorance on the subject, to speak of the chemical residuum as a mixture of small amounts of very diverse substances. Some of these "traces," like lactic acid and inosic acid, were early recognized and found their way into descriptive text-books. For the most part, however, the heterogeneous collection of the undiscovered products has awaited investigation. From among these the Russian chemist Gulewitsch has brought to light the base carnosin, which deserves to rank prominently among the extractives of muscle. Carnosin, with an empirical formula $C_9H_{14}N_4O_3$, appears to be a dipeptid composed of the amino-acids histidin and beta-alanin. From a chemical point of view, therefore, it is an unusual compound, judged by the structures with which the biochemist ordinarily deals. An added interest arises from the newest analyses of von Fürth and Hryntschak[1] which indicate the presence of as much as 3 gm. per kilogram of mammalian muscle. In order of magnitude this approaches the content of creatin in the same tissues.

PRACTICAL SANITATION IN INDIANA

During the last two years, 393 new schoolhouses have been built in Indiana at a total cost of about $4,000,000. These new buildings are all thoroughly modern and sanitary in their construction and equipment and are in full accordance with the sanitary schoolhouse law of the state. This law, passed several years ago, requires that the plans and specifications for all schoolhouses must be submitted and approved by the state board of health before the contracts for their construction are authorized. The condemnation by the state board of health of numerous insanitary, dilapidated and otherwise unsatisfactory school buildings and the enforcement of the new law have brought about a marked change in school sanitary conditions in Indiana. The results show the ease with which better conditions may be secured, provided effective remedies are adopted. It is obviously much easier to change the plans than to change the buildings, and far better to criticize a building before it is built than after it is constructed. Most persons want to do what is right and will do so if they know what is right at the right time. Indiana's schoolhouse law is a striking example of a sensible law that really accomplishes something. It ought not to be difficult to secure similar laws in every state. In most of our principal cities the plans of every building must be approved by the proper authority—usually the city health board—before the building can be erected; certainly no building is more important than the school.

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[2] Pincussohn, L., and von Roques, K. R.: Untersuchungen über die fermentative Eigenschaften des Blutes. iv. Untersuchung der Formbestandteile des Blutes auf proteolytische Fähigkeiten, Biochem. Ztschr., 1914, lxiv, 1.

[1] Von Fürth, O., and Hryntschak, T.: Ueber den Karnosingehalt der Säugetiermuskeln, Biochem. Ztschr., 1914, lxiv, 172.

A SCOTTISH MEDICAL SCHOOL

It is the custom for the British Medical Association to select as its president a prominent member of the profession resident in the town in which its meeting is held. At the session just closed at Aberdeen this office was held by Sir Alexander Ogston, Emeritus Regius Professor of Surgery in the University of Aberdeen. His president's address was devoted to the history of Aberdeen and the founding of what was probably the first university medical school in the British Islands. It is probable, he admits, that some of the older universities of Great Britain may have had in a clause in the papal bill authorizing their establishment some reference to a faculty of medicine, but it would appear from his showing that such a plan was practically carried out from the beginning only in the University of Aberdeen, founded in the latter half of the fifteenth century. At that date Scotland, as Ogston tells us, was, except for a few coast towns, a practically uncivilized country. The age as far as learning was concerned was a dark one in North Britain and it was in the northern and least cultivated portion that Aberdeen was situated. Still, as he shows, there was appreciation of learning, and a grammar school existed in that city, or village as it was at the time, as early as 1263. The larger part of the address is devoted to the history of the founder of this first medical school in Britain, Bishop Elphinstone, who appears to have been a bright and shining light in a very naughty world, a contrast to most other Scottish prelates of his time, who were largely devoted to their own interests rather than to the welfare of their flocks. The address is an interesting historical document and as such was probably heard with as much interest as it would have been had not the author modestly excused himself from following the more usual custom of dealing with some purely medical subjects and the advances made in medicine during the year that had passed. In this contribution to medical history Sir Alexander Ogston gives complete evidence that his powers of description and of conveying information attractively have not yet failed him.

NEWS IN PEACE AND WAR

A few weeks ago the cables announced an accident in which fifteen persons died through explosion of a German dirigible balloon. The story was featured with expressions of horror and sorrow at this terrible catastrophe. The newspapers commented on it for days. The other day the cables announced that a balloon containing twenty-five German soldiers had been rammed by a French aeroplane. Twenty-six courageous fighters in the height of their activity met a sudden and terrible death. This item was printed as a mere incident, and no comments made. But this is war!

Medical News

CALIFORNIA

Summer Course at Stanford.—A summer graduate course in medicine, approved by the board of trustees of Stanford University, opened July 6 at San Francisco. The course will continue until August 15, and will consist of twenty-two lectures, together with clinical work at several hospitals.

Restraining Order against Board.—A temporary restraining order is said to have been issued against the State Board of Medical Examiners on the petition of Drs. Edward J. Rich and Gidean M. Freeman, Los Angeles, accused of being guilty of unprofessional conduct in connection with the museum of Dr. L. J. Jordan, incorporated.

Osteopaths Among Drugless Healers.—It is reported that at a recent meeting of the California Board of Medical Examiners action was taken refusing to recognize osteopathic colleges otherwise than as drugless practitioner institutions. Several osteopathic colleges were seeking recognition for their graduates with the right to secure the license of "physician and surgeon."

New Hospital Buildings to be Erected.—Dr. H. T. Summersgill, superintendent of the New Haven Hospital, has been appointed superintendent of the University Hospital in San Francisco. He is now in California to take charge of the present hospital of the University of California Medical School, and to aid in completing the plans for the new teaching hospital buildings, to erect which $615,000 has been given by various friends of the university.

CONNECTICUT

Yale Anatomist Goes to Philadelphia.—Dr. Jacob Parsons Schaeffer, professor of anatomy in the medical department of Yale University, has been elected professor of anatomy and director of the Daniel Baugh Institute of Anatomy and Biology of Philadelphia.

Hospital Alumni Dine.—At the third annual meeting of the St. Francis Hospital Alumni Association at Hartford, the following officers were elected: president, Dr. James F. Rooney, Hartford; vice-president, Dr. Frank J. Ronayne, Hartford; secretary, Dr. J. D. Hartnett, Winstead, and treasurer, Dr. David A. Flynn, New Haven.

Honorary Degrees.—At the 100th anniversary of the beginning of teaching in Yale University, the following honorary degrees were conferred on medical men: Master of Arts.—Dr. Edward Robinson Baldwin, assistant director of the laboratory at Saranac Lake, N. Y., for the study of tuberculosis; Dr. Fred Towsley Murphy, professor of surgery in Washington University, St. Louis; Dr. John Howland, professor of pediatrics in Johns Hopkins University, Baltimore; Capt. Charles Franklin Craig, M. C., U. S. A., officer in charge of the Army Biological Laboratory, Fort Leavenworth, Kan.; Dr. Elliott Proctor Joslin, assistant professor of the theory and practice of physics in Harvard Medical School; Dr. Henry Hun, professor of nervous diseases in Albany Medical College; Dr. Oliver Cotton Smith, Hartford, Conn., president of the Connecticut Medical Society and formerly surgeon-general of the state, and Dr. William Francis Verdi, New Haven, Conn. Doctors of Science.—Dr. Edgar Fahs Smith, provost of the University of Pennsylvania, Philadelphia, and Dr. Richard Pierson Strong, professor of tropical medicine in Harvard Medical School, formerly pathologist of the Bureau of Science of the Philippine Islands. Doctor of Laws.—Surg.-Gen. William Crawford Gorgas, U. S. Army.

DISTRICT OF COLUMBIA

Hospital Closed.—The Northern Dispensary and Emergency Hospital at 3121 Fourteenth Street, S. W., has been closed by order of the board of directors. The reasons assigned for closing the institution are lack of funds and loss of interest by the board of lady managers.

Personal.—Dr. Charles H. Richardson, Washington, has gone abroad.——Dr. Hulbert Young, chief inspector of the district health department, has been appointed supervisor of the commercial laboratories of Baltimore.——Dr. J. Lester Brooks has been appointed medical inspector by the health officer.——The title of Dr. William C. Fowler, in charge of the contagious disease service, has been changed to chief medical inspector.

The Pardon of Kemp.—The prison sentence of two years in the penitentiary of Dr. Thomas J. Kemp, son-in-law of Senator Fletcher of Florida, condemned for using the mails to distribute information regarding the procuring of abortion, was recently commuted by the president to the payment of the fine, waiving the prison sentence imposed by the court. At a meeting of the Washington Medical Society, July 23, President Wilson was severely criticized for his action, and Congressman Mann introduced a resolution before Congress asking that the papers in the case be transmitted to the House for examination.

ILLINOIS

New Officers.—Ogle County Medical Society at Polo: president, Dr. Robert E. Stevens, Rochelle; secretary, Dr. Josiah T. Kretsinger, Leaf River.

Physician's Murderer Found Guilty.—After twelve hours deliberation, a jury at Duquoin, August 1, found Jesse Joplin guilty of the murder of Dr. D. Winton Dunn, former mayor of Duquoin, and fixed his penalty at life imprisonment.

Dixon Epileptic Colony.—Sixty cottages will be under roof before winter at the new State Epileptic Colony at Dixon. Twenty will be erected to the south, twenty to the north, ten to the east and ten to the west of the administration building.

Personal.—Dr. Mary M. Mars, who was recently in charge of the inspection of the children of the Evanston schools, has become a member of the staff of the Breed Tuberculosis Sanatorium.——Dr. Mary L. Rosenstiel, Freeport, sailed for Europe, recently.

Supervisors Will Not Recommend Erection of County Sanatorium.—At the June meeting of the board of supervisors of Kane County, called to look into the matter of the establishment of a county tuberculosis sanatorium, a report was made opposing the establishment at present of such an institution, while acknowledging its value. The cause of the refusal was the heavy initial cost of the institution—$40,000—and the expense of maintenance.

Tuberculosis Institution Ready.—The new building of the dispensary of the Evanston Tuberculosis Institute at the corner of University Place and Maple Avenue, has been completed and the institution is in active operation. The hours for receiving patients are from 2 to 3 p. m., Mondays and Thursdays. The dispensary is under the medical supervision of Drs. William A. Phillips and William G. Alexander. It is expected that the general dispensary of the building will soon be ready to receive patients.

Chicago

Consumptive Relief Society.—During June the Jewish Consumptive Relief Society treated 250 cases, expended more than $520 for milk and eggs, and in addition cared for several patients at different hospitals at a cost of $150. Plans for the new sanatorium of the society are completed and bids for plans have been requested.

Neurologists Convention Closes.—The third annual session of the Alienists and Neurologists of the United States, conducted under the auspices of the Chicago Medical Society, has adjourned. The fourth annual meeting will be held in Chicago in July, 1915. During the week more than two hundred and fifty physicians registered, representing seventeen states.

Health Department Aid Not Needed by Supervising Engineers.—Dr. George B. Young, commissioner of health, is said to have been notified, July 24, by the board of supervising engineers that the department cannot be represented in connection with the work of the board. The intention of the health commissioner was to assist in the supervising of heating and ventilation devices for cars.

INDIANA

Disease Prevention Day.—Plans are being made for the observance in Indiana of disease prevention day. County organizations are being formed to cooperate with the state central organization in preparing the program of the day which is to be in October, the date to be fixed by the governor.

State Association Meeting.—The annual meeting of the Indiana State Medical Association will be held in Lafayette, September 23-25. Dr. George F. Keiper is chairman of the committee on arrangements. The sessions of the association will be held at the Y. M. C. A. building and the Second Presbyterian Church. The Hotel Lahr has been selected as the headquarters of the association.

Good Work in Porter County.—Porter County is taking high rank among the counties of the state in efficiency in preventive medicine. Health Commissioner Simon J. Young, who is also health officer of Valparaiso, has induced the county to build a new laboratory and to appoint an assistant, W. D. Little, a recent graduate of the department of sanitary science of the Purdue University, who will have charge of the health work and is now acting health commissioner. Among other work of the department is an extensive inspection of the milk-supply of the county. Preparations are also under way for the general observance of "health day," October 2.

MASSACHUSETTS

Health Bureau Moved.—The bacteriologic bureau of the Boston Board of Health moved July 27 from its old quarters on Huntington Avenue to the top floor of the new City Hall.

Fresh-Air Fund Appeal.—The Traveller's Fresh Air Association announces that it will require at least $5,000 to finish the season and to provide the outings that have been promised to the children of Boston.

New Hospital for Winchester.—The Visiting Nurse Association has purchased a site on Highland Avenue on which to erect a hospital, which is to be in Elizabethan style, of red brick construction with limestone trimmings. Plans for the building have been accepted, and the construction will commence in a short time.

Hospital Needs Funds.—President A. Shuman of the board of trustees of the Boston City Hospital has applied to the mayor for an addition of $46,000 to the budget of hospital expenses for the current year. Of this $13,200 is for increase in salaries, $1,500 for special police, and $3,500 for the installation of a sprinkling system.

Personal.—Dr. Frank G. Wheatley, North Abington, has been appointed vice dean of Tufts College Medical School, Boston.——Dr. M. Blanche Cooney, Haverhill, is the first woman to be appointed as medical examiner for women in the Catholic Order of Foresters of Massachusetts.——Dr. Freeman A. Tower, superintendent of the Burbank Hospital, Fitchburg, has resigned and will practice in Derry, N. H.

MICHIGAN

Upper Peninsula Society to Meet.—The Upper Peninsula Medical Society will hold its annual meeting at Houghton, April 11 and 12.

Tri-County Society Organized.—A Tri-County Medical Society was organized and effected a permanent organization recently at Memphis. The following officers were elected: president, Dr. Robert McH. Greenshield, Romeo; vice-president, Dr. Jacob H. Burley, Almont; secretary, Dr. Roy J. Pelton, Armada.

Personal.—Dr. Walter G. Paterson, Detroit, has sailed for Europe.——Friends and co-workers of Dr. Theodore A. McGraw, for twenty-five years a member of the staff of St. Mary's Hospital, Detroit, gathered at his home, June 30, and presented him with a handsome silver vase, suitably inscribed and filled with American Beauty roses.

Kalamazoo Academy Meets at South Haven.—The Kalamazoo Academy of Medicine held a meeting at the home of Dr. Arthur R. Elliott of Chicago, 3½ miles south of South Haven, July 25. The program was furnished by Dr. Charles E. Paddock, Chicago, who spoke on "Indications for Cesearean Section;" Albert E. Halstead, Chicago, who discussed the "Surgical Aspects of Gall-stones," and Dr. Arthur R. Elliott who spoke on "Some Medical Aspects of Gall-Stone Disease." Luncheon was provided by Dr. Elliott and his associates.

NEBRASKA

Personal.—Dr. Joseph T. Anthony, Omaha, has sailed for Europe.——Dr. Oscar H. Hahn has resigned after four years of service at the Nebraska Sanitarium, Hastings.

New Officers.—Knox County Medical Association at Creighton, July 21: president, Dr. Frank H. Kucera, Verdigre; secretary-treasurer, Dr. Glen E. Peters, Bloomfield.

Northwestern Nebraska Physicians Organize.—The Northwestern Nebraska Medical Association, was organized by physicians of Brown, Rock and Keyapaha counties at Ainsworth, July 24. Long Pine was selected as the next place of meeting. The following officers were elected: president, Dr. James M. Tische, Wood Lake; vice-president, Dr. William

O. Colburn, Stuart; secretary, Dr. James C. Tucker, Long Pine, and treasurer, Dr. Thomas J. Lawson, Long Pine.

NEVADA

Personal.—Dr. and Mrs. J. La Rue Robinson, Reno, have returned from Atlantic City.——Dr. Patrick J. Mangan, Winnemucca, has been appointed a member of the State Board of Medical Examiners, vice Dr. E. A. Wheeler, Goldfield, deceased.——Dr. A. D. Field, Reno, has moved to Cooledge, Neb., and Dr. John T. Rees, Wadsworth, has located in Denio, Nev.

NEW YORK

Reciprocity with Virginia.—A reciprocity agreement between the state of New York and the state of Virginia has been entered on for the endorsement of medical licenses, providing the applicants have complied with all the specified requirements.

May Abolish Ambulance Chasers.—The Workmen's Compensation Commission has adopted a resolution which states "that the commission declines to consider an agreement for compensation for legal services in connection with any claim arising under the law in advance of the performance of the services for which the claim is made; and that in all cases claims for legal services will be considered solely with reference to the actual service performed on a statement submitted to the commission on the conclusion of the service.

Commission to Study Feeble-Minded.—Governor Klynn has recently appointed a commission to investigate the problem of the feeble-minded in this state. The members are to serve without pay and are as follows: Mr. Robert W. Hebberd, Dr. Max G. Schlapp, Dr. Charles Loomis Dana, Prof. Stephen P. Duggan and Mrs. Mary C. Dunphy. The report of the commission is to be submitted before Feb. 15, 1915, with legislative recommendations. It is pointed out that there are 30,000 feeble-minded persons in New York while accommodations are provided by the state for only 4,000.

Progress of Infant Welfare Campaigns.—The three welfare exhibits of the State Department of Health have completed their first tour of the state. They have covered twenty-five counties and been shown in forty-four cities. The three exhibits were installed simultaneously each week in three adjacent cities, thus concentrating the campaign in a comparatively small territory. The results of the work are already apparent in the establishment of numerous welfare stations in the cities that have been visited and they have left a trail of enthusiastic and constructive welfare work shown by the formation of welfare committees, employment of visiting nurses and establishment of welfare stations. The attendance at the exhibits was very satisfoctory. In Syracuse it is reported that 24,000 persons viewed the exhibits and attended lectures.

New York City

Man Dies from Glanders.—Josè La Vadis, a Spanish mechanic, died from acute glanders in Bellevue Hospital, July 25. It is supposed that he contracted the disease while working in a livery stable in Jersey City.

Vacation Typhoid.—In warning vacationists as to care in the choice of summer resorts in order to avoid the danger of contracting typhoid fever, the Health Department calls attention to an investigation as to just what part vacation typhoid plays in the typhoid records of the city. The diagram of the average of ten years shows that typhoid cases in the city averaged from 15 to 37 a week except for the months of August, September and October, the months when summer vacationists get back to town. In these months typhoid illnesses reached a maximum of over 100 cases a week in September and receded to only 60 cases a week in October.

Personal.—Dr. Lewis A. Sexton has tendered his resignation as resident physician at Willard Parker Hospital to take effect August 1, and has accepted the position of superintendent of Johns Hopkins University Hospital, Baltimore.——Dr. Benjamin Jabbon has received the honor medalion of the Servian Order of St. Sava in recognition of his services during the recent alkan War in responding to an appeal to enter the Balkan ervice and assist in preventing the spread of cholera amon the soldiers.——Among those who have sailed for Europe a Dr. Colin L. Beggs, Dr. and Mrs. Edward Everett Hicks, r. and Mrs. George Draper and Dr. Louis A. Ewald.—— r. Walton Martin and Dr. David B. Jewett, Rochester, hav returned from Europe.——Dr. Charles White Berry, Brooklyn, has been appoined sanitary-supervisor of the state partment of health.

Progress Against Venereal Diseases.—The work of the Department of Health in this field is increasing by leaps and bounds. Since the venereal diagnostic clinics were established in May, 1912, the average daily attendance has increased from two to three patients a day to an average of more than thirty-eight. At the present time about 120 Wassermann tests and 30 complement-fixation tests for gonococcus infection a day are being made. Seventy-five per cent. of the specimens examined are sent in by private physicians and institutions. During May, 1914, 127 cases were seen by the medical advisor and of these 15 had been previously treated by quack physicians. Placards have been placed in the toilets of saloons and other places in the city calling attention to the fact that confidential advice regarding gonorrhea, syphilis and sex diseases can be obtained free at Room 10, Department of Health, 149 Center Street, certain days of the week from 2 to 4 p. m. A very difficult problem has been the reference of patients having no family physician to a physician for treatment. Patients able to pay a private physician are given a list of the attending physicians of the various genito-urinary and dermatologic clinics maintaining the required standard. Cards of instruction to those having syphilis or gonorrhea have been printed and there is now in press a circular on the dangers of these diseases and on the methods of the advertising quack.

Amendments to the Sanitary Code.—At the meeting of the Board of Health on July 28 three amendments to the Sanitary Code which have been approved by the New York Academy of Medicine and the advisory council of the Board of Health were adopted. The first of these amendments alters the ordinance making it unlawful to have dogs in the streets or public places without muzzles in June, July, August and September, so that dogs will not be allowed in the streets or in public places at any time during the year without a muzzle. It is said that this is the first step in an effort to secure a dogless city. This ordinance will go into effect as soon as the Board of Health deems that sufficient opportunity has been given for owners of dogs to become acquainted with the ordinance. Another ordinance prohibits the use of wood alcohol or naphtha in any toilet or medicinal preparation and orders the adoption of a poison label which must have the skull and cross-bones and the following: "POISON.—Wood Alcohol or Wood Naphtha. *Warning.*—It is unlawful to use this fluid in any article of food, beverage or medicinal or toilet preparation for human use internally or externally." The word naphtha has been introduced with the hope that it will supplant the term wood alcohol and because it is desired to impress the fact that wood alcohol is wood naphtha and that it is poisonous. The third amendment aims to strengthen the Boylan law in regard to the sale of narcotic drugs. The short time during which the Boylan law has been in operation has served to show that however admirable it is it fails to restrict the use of habit-forming drugs to the extent hoped for, as so many ways of evading the terms of the law have been found. It is believed that the following ordinance will make the law more effective:

> "No cocain or salts of cocain, alpha or beta eucain, either alone or in combination with other substances, or any substance under any other name giving a physiologic reaction similar to the physiologic reaction of cocain; and no opium or preparation of opium, and no morphin or salts of morphin, and no cannabis indica or preparations of cannabis indica, or the derivatives of either or any of the substances named herein, shall be held or offered for sale or sold or given away at retail by any person in the city of New York, except upon the written prescription of a duly licensed physician, veterinarian or dentist.
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> "Nothing hereinbefore mentioned, however, shall apply to compounded mixtures containing opium or morphin or cannabis indica or their derivatives for external use only, in the form of liniments, ointments, oleates or plasters."

To correct another nuisance the department passed an amendment designed to stop the adulteration and misbranding of commonly used medicines for internal use. For instance it was found that the formula for citrate of magnesia had been changed by one manufacturing druggist when citric acid increased in price so that the contents of each bottle of his citrate of magnesia was 30 per cent. weaker than formerly, while the price remained the same. Hereafter the strength must conform to the standards set up in the U. S. P.

OHIO

Trachoma at Avondale Children's Home.—Two cases of trachoma were found by Dr. H. Reasoner Geyer of Zanesville in the Avondale Children's Home, Muskingum County. These cases are being properly cared for at present, and special precautions are being taken to prevent the spread of the disease to other children.

Revises Limitation of Physicians' Fees.—As a result of the presentation of arguments by a special committee of the Ohio State Medical Association, the State Industrial Commission has granted a revision of the amendment to the workingmen's compensation law as to the limit of $200 as the maximum physician's fee.

Tri-County Sanatorium.—At a meeting held in Steubenville, July 15, the commissioners of Jefferson, Belmont and Guernsey counties agreed to the proposition of building a joint tuberculosis sanatorium, that a tract large enough to accommodate fifty patients will be sufficient, and that the cost of the building and grounds is not to exceed $50,000. A location in Jefferson County, near Richmond, is being considered.

Rat Campaign.—As a result of the advice issued to local boards of health, by Dr. Eugene F. McCampbell, secretary and executive officer of the Ohio State Board of Health, many cities and villages throughout the state have started antirat campaigns and the results so far have been good. The newspapers are giving considerable space to these campaigns and it is probable that an actual economy will result, as the damage rats do in Ohio is estimated to reach considerably over the $10,000,000 mark. Containers to forward rats found dead in river cities and villages have been sent out and preparations are completed to examine rats for plague in the Divison of Hygienic Laboratories.

Typhoid in Steubenville.—An epidemic of typhoid fever began in Steubenville about July 1. At the present time there are about fifty cases. An investigation by assistant state epidemiologist, Walter E. Obetz, of the staff of the State Board of Health has revealed the fact that a large proportion of the patients used water from a spring situated to the northwest of the city. An examination of the water showed it to be grossly polluted and the supply was immediately stopped. The water-supply of Steubenville is subject to considerable pollution and as a result a large proportion of the population use water from private sources. Many of these private sources are poorly protected, and epidemics like the present are unavoidable.

Board of Health Officers Confer.—The thirty-ninth conference of the Ohio State Board of Health with representatives of local boards of health was recently held in Cedar Point, Ohio. The conference was for boards of health and health officers of all villages of less than 3,000 population and all townships in the northern counties of Ohio. Under the Ohio law it is mandatory for each board of health to send a representative to these conferences when so ordered. The attendance was about 400 and nearly 200 health officers were present. The balance was made up of members and clerks of boards of health, mayors and members of council, and other representatives. The program lasted through four sessions and comprised addresses by members of the State Board of Health and lectures by members of the staff. Rural sanitation in its varied aspects was thoroughly discussed. The evening session was given over to two lantern demonstrations, the first illustrating the campaign against communicable diseases, by Frank G. Boudreau, M.D., director of the division, and the second on rural tuberculosis and industrial hygiene, by Dr. Emery R. Hayhurst, Columbus, director of the occupational surgery of Ohio. The secretary and executive officer, Dr. Eugene F. McCampbell, Columbus, gave an addess on the enforcement of public health laws.

PENNSYLVANIA

New Officers.—Lehigh Valley Medical Society at Birchwood Inn, recently: president, Dr. James A. Singer, East Stroudsburg; secretary, Dr. John W. Luther, Palmerton.

Physicians Ask to Have Registrar Retained.—A majority of the physicians of York have refused to sign the petition asking for the removal of Dr. John H. Bennett as registrar of vital statistics.

Personal.—Dr. Daniel N. Butler, U. S. N. (retired), Reading, has presented the Reading Public Museum with a collection of Alaskan Eskimo curiosities.——Dr. Martin E. Griffith, Monessen, sailed for Europe, July 18.

Philadelphia

Woman Held on Baby Farm Charges.—On July 28, the coroner's jury found Mattie Burk, colored, chargeable with the deaths of three colored children, who were victims of starvation at her alleged "baby farm." She was held without bail for the grand jury.

Personal.—Dr. Francis X. Dercum and J. William White have sailed for Europe.——Dr. George E. de Schweinitz has resigned as ophthalmic surgeon and has been appointed consulting ophthalmologist to the Philadelphia General Hospital. Dr. Edward A. Shumway has succeeded Dr. de Schweinitz as ophthalmic surgeon to the hospital.

Unclean Poulterers Arrested.—On July 31, the division of sanitation of the Bureau of Health opened a crusade to enforce regulations that will end the insanitary conditions under which 50,000 fowls are now killed in this city every week. Six Hebrew "Schochets" or chicken slaughterers were arrested and held under $200 bail for court by Magistrate Pennock on the charge of slaughtering without a license. In an inspection trip, one place on Fourth Street was typical. Here chickens were killed in a dark cellar, the floor was litered with a soggy mass of feathers, filth and blood and filthy coops, containing live chickens; 500 chickens a week were killed in this place. What the health officers say can be done to eradicate these conditions was shown at a model slaughter house recently erected on Kater Street near Seventh. The place has cement floors, is well lighted and ventilated, the chickens are cooped in separate rooms, in sanitary cages, and the slaughter rooms are equipped with tools which prevent blood being splashed over the place.

GENERAL

College Merger.—The North Carolina Medical College, Charlotte, will be merged with the Medical College of Virginia, Richmond, but will retain a nominal existence until it confers degrees on the three remaining classes of students. The students will receive the balance of their medical instruction at Richmond, but the degrees will be granted by the North Carolina Medical College.

Sioux Valley Physicians' Convention.—The nineteenth annual meeting of the Sioux Valley Medical Society was held in Sioux Falls, S. Dak., July 22, and the following officers were elected: president, Dr. Robert Evans, Fort Dodge, Iowa; vice-presidents, Drs. Julius A. Hohf, Yankton, S. Dak., and Charles L. Sherman, Luverne, Minn., and secretary-treasurer, Dr. George S. Browning, Sioux City, Iowa (reelected).

Surgical Congress Election.—At the annual meeting of the Clinical Congress of Surgeons of North America, held in London, the following officers were elected on July 31: president, Dr. Charles H. Mayo, Rochester, Minn.; vice-presidents, Drs. Herbert A. Bruce, Toronto, and Robert L. Dickinson, Brooklyn; secretary, Dr. Franklin H. Martin, Chicago (reelected), and treasurer, Dr. Allan B. Kanavel, Chicago (reelected).

Bequests and Donations.—The following bequests and donations have recently been announced:

Association for Improving the Condition of the Poor; Brooklyn Bureau of Charities and Brooklyn Hospital, each $3,792, by the will of Mrs. Jane A. Benson.

Mount Sinai Hospital, New York City, $1,000, by the will of Isadore Wormser.

Mount Sinai Hospital, New York City, and Montefiore Home, each $1,000, by the will of Adolph Magnus.

New York Lying-In Hospital, $5,000, St. Rose's Home, New York City, $3,700, by the will of Miss Lilla Gates.

Nassau Hospital, Mineola, L. I., $5,000, by the will of W. Burling Cock.

Seney Hospital, Brooklyn, one-seventh of the estate of Emalissa Purvis, valued at $16,000.

Pottsville, Pa., Hospital, $50,000, on the death of J. Gardner Muir.

St. Timothy's Hospital, Philadelphia, $5,000, by the will of Elizabeth E. Smith.

School Hygiene Congress.—An international school hygiene congress will be held in Brussels next year. The program takes up the following subjects: school buildings and equipment; medical inspection of urban and rural schools; prevention of contagious diseases in schools; the teaching of hygiene to teachers and parents; school hygiene in its relation to physical education of children; methods, syllabuses and school equipment in their relation to school hygiene; school hygiene in its relation to the children, and school hygiene in its relation to adolescents. The congress is under the patronage of the King of Belgium, and under the auspices of the National Institute of Pediology and the Belgian Pedotechnic Institute. The committee of organization is presided over by M. J. Corman, director general department of sciences and art, and Dr. J. Demoor, director of the Free Institute in Brussels. For information, and in all matters pertaining to the congress, address Dr. H. Rulot, secretary-general, 66 rue des Rentiers, Brussels.

broken hypodermic needle. The medical evidence was to the effect that the needle had probably got into a vein and been carried to the heart. It had nothing to do with the cause of death. The brother of the deceased said that eighteen months ago the physician had in his possession a hypodermic syringe of which the needle had broken off.

Workman's Claim for Compensation for Obesity

As shown in previous letters to The Journal, the workmen's compensation act has given rise to many extraordinary claims for compensation for injury arising out of employment. The record appears to have been broken by the claim of a Scotch miner for compensation for obesity. He met with an accident from which he recovered, but his enforced idleness increased his natural tendency to obesity to such an extent that he found it difficult to follow his occupation. When he recovered, his employers ceased to pay him compensation, but he contended that they were still liable because as a result of his idleness he was getting too fat for manual labor. The arbitrators decided that this did not entitle him to compensation. He appealed to a court which took the opposite view. The case was then taken to the House of Lords (the highest court in the realm) where the decision was reversed and the arbitrators' award restored.

National Council for Combating Venereal Diseases

It has been decided to form a national Council for Combating Venereal Diseases. A number of private conferences have recently been held at which the question of forming such a body has been discussed. Sir Thomas Barlow presided, and among those who have taken part are Sir Rickman Godlee, Sir Francis Champneys, Sir Clifford Allbutt, Sir William Osler, Sir Henry Morris, Sir A. Pearce Gould, the Bishop of Southward, and Major Leonard Darwin. The council will be composed of representatives of the medical profession and the general public. The decision now come to is the outcome of the efforts spread over two years by a committee appointed by the Royal Society of Medicine and the Eugenics Education Society. Among its recommendations was one suggesting that popular education was one of the most necessary steps and probably the most effective for combating the ravages of venereal disease. The immediate provision of proper facilities for treatment was also strongly urged. The submission of this report was followed by the appointment of a further special committee, which discussed the procedure to be adopted to carry out the recommendations. The next development was the appointment of the royal commission, the proceedings of which have been reported in previous letters to The Journal.

PARIS LETTER

Paris, July 17, 1914.

The Rights of the Surgeon

Called to see a patient, Dr. Reynier, agrégé and surgeon to the hospitals of Paris, diagnosed an abscess of the appendix, necessitating an operation. His fee was to be 3,000 francs ($600). When the operation was begun, Dr. Reynier discovered that the appendix was intact, but that there was an abscess of the kidney, and he operated for this abscess. Now the patient refused to pay the 3,000 francs agreed on to the surgeon, alleging that if she had acquiesced to the payment of such a sum she had done it only because the operation was to be on the appendix, and not on the kidney, an operation which should not be worth more than 500 francs ($100). The case was taken to court and Dr. Reynier won the suit. The decision affirmed that the surgeon is always at liberty to perform any operation which he may think necessary for the welfare of the patient, without being held to account for the specific nature of the operative measures which he has taken in good faith, with the intention of curing the affection which he knows exists.

Local Anesthesia in Abdominal Operations

The last sessions of the Société de chirurgie were devoted to very important discussions on the use of local anesthesia in abdominal operations. Professor Reclus, who was the originator of this mode of anesthesia, recalled that when, twenty-seven years ago, he addressed the Société de chirurgie for the first time on the 111 operations which he had performed with local anesthesia, cocain had a bad reputation. The discovery of novocain has widened the field of local anesthesia. As this substance has no vasoconstrictor power, it is well to use it with epinephin. The following solution makes a perfect anesthetic: serum, 100 c.c.; novocain, 0.5 gm.; epinephrin, 1:1,000, 25 drops. Reclus asserts that the surgeon should have the patience to perform in this manner all exploratory laparotomies, radical cures for eventration and hernia, gastrostomies, artificial ani and the ablation of all tumors whose anatomic position is known, cysts of the ovary and hydatid cysts of the liver in particular. If, in the course of the operation, adherences or unforeseen difficulties are met, mixed anesthesia may be used, and a few whiffs of chloroform or ether be given. The patient falls asleep more rapidly, because he is under the influence of the novocain. Furthermore, as Crile demonstrated, disintegration of the cerebral cells is avoided, owing to interruption of nervous influx. Reclus recently had occasion to perform a whole series of abdominal interventions, in particular the extirpation of a cancer of the transverse colon, without the help of general anesthesia, but merely by the use of local anesthesia.

Dr. Chaput, surgeon to the hospitals of Paris, has been an advocate of Reclus' idea for some time. He has used local anesthesia in resection of the maxilla and amputation of the breast, but as a rule he reserves this method for debilitated cases, generally employing lumbar anesthesia, which is, he says, a rapid, complete, simple and benign process.

Professor Quénu uses local anesthesia among all tainted or infected patients, in cases of angiocholitis when he must perform an emergency cholecystostomy. He does not agree with those who think that they cannot use this method in cases of abscess or phlegmon; it can be done by beginning the anesthetic line on the healthy skin and extending it to cover the inflamed zone. But in the question of exploratory laparotomy he differs entirely from Reclus: he considers that the patient should be put to sleep in order to have a complete examination of the abdomen.

Dr. Tuffier, agrégé and surgeon to the hospitals of Paris, had occasion to employ local anesthesia in pulmonary surgery. After having anesthetized the line of incision, he opened the intercostal space and anesthetized the intercostal nerve. He could avoid the ribs in a considerable proportion, and, in one case, explore the apex of the lung which he intended excising, detach the adhesions and make an artificial pneumothorax. In another case he performed a pneumolysis. The patients operated on felt no pain at any time, and, moreover, it was possible, by having the patient make an effort, to inflate the lung and to keep it from contact with the pleura, which makes useless methods of hyperrepression and hyporepression.

Professor Lejars dwelt on the advantages which the use of local anesthesia brings in operations on the stomach, by avoiding the pulmonary complications which are the darkest place in the realm of surgery. Professor Hartmann was equally impressed with the frequency of pulmonary complications following operations on the stomach; at one time he performed all gastro-enterostomies with local anesthesia, but he had nevertheless continued to observe some accidents.

Dr. Walther, agrégé and surgeon to the hospitals of Paris, thinks that even for exploratory laparotomies it would be possible to use novocain in all cases in which the extent of the lesions of the tumor to be operated on are known; but the case is not parallel when an indeterminate lesion must be sought. Walther thinks that in the particular case of appendicitis, local anesthesia should be of great service. It is evident that if one happens on widely spread and unexpected lesions, adhesions or an extended region of inflammation, ether or chloroform must be given. He had noticed, as had Reclus, that patients go to sleep rapidly. Localized anesthesia presents further the immense advantage of obviating all the inconveniences which follow the use of chloroform; the patient can resume an almost normal life a few hours after the operation. There are some cases of intolerance, however, and Walther has observed a patient who was operated on in the morning and who presented a whole series of accidents in the afternoon (vomiting, syncope, profuse perspiration); he had been given a very small injection, but he was a very nervous and particularly impressionable subject.

Professor Pozzi thinks that local anesthesia in laparotomies could be advocated in a certain number of cases; for example, in all gastrostomies and in colostomy; but when laparotomy is undertaken, it is an entirely different question. This is the case in gynecology, in which one is always liable to meet surprises. To be sure, recourse may be had to mixed anesthesia, but certain patients resist, struggle and make efforts which bring on a certain degree of evisceration; this

Marriages

Orval James Cunningham, M.D., Kansas City, Mo., to Miss Grace Margaret Quinlan of Chicago, June 7.

Henning Vitalis Hendricks, M.D., Hardwick, Mass., to Miss Jennie M. Burnett of Underhill, Vt., June 24.

Gordon Lawrence McClellan, M.D., Big Sandy, Mont., to Miss Ida Slysse Hein of Dover, Minn., June 30.

Hubert Shattuck Howe, M.D., New York City, to Miss Mary Sinsabaugh Gallup of Denver, July 21.

Elexious Thompson Bell, M.D., to Miss Cecile Stuart Porcher, both of Minneapolis, Minn., July 29.

Murdoch Campbell Smith, M.D., to Miss Helen Emery Cruickshank, both of Lynn, Mass., July 11.

John Daniel O'Brien, M.D., to Miss Florence Mary McCrea, both of Canton, Ohio, June 17.

Charles Edward Eaton, M.D., to Miss Caroline A. Bull, both of Seattle, Wash., July 22.

Thomas Irving Stines, M.D., to Miss Laura Lee, both of East St. Louis, Ill., July 28.

Deaths

Evan Norton, M.D. Washington University, Baltimore, 1869; a Confederate veteran; for more than twenty-five years a member of the board of trustees of the Conway (S. C.) high school; and for twelve years auditor of Horry County; editor of the *Horry Herald* from 1876 to 1886; once president of the Horry County Medical Society; and a member of the county board of medical examiners; died at his home in Conway, S. C., July 21, from pellagra, aged 72.

Charles L. Williams, M.D. Bellevue Hospital Medical College, 1867; a Confederate veteran; a member and once vice-president of the Medical Society of Georgia; for many years a member of the city council, city physician and police commissioner of Columbus, Ga.; died at his home in that city, July 16, from acute dilatation of the heart, aged 70.

James Forster Alleyne Adams, M.D. Harvard Medical School, 1866; a Fellow of the American Medical Association; one of the most prominent practitioners of western Massachusetts; consulting physician to the House of Mercy, Pittsfield; a medical cadet in the Navy during the Civil War; died at his home in Pittsfield, Mass., July 27, aged 70.

Thomas L. Hutchison, M.D. Kansas City (Mo.) Medical College, 1902; a member of the Kansas Medical Society; formerly a specialist on diseases of the eye, ear, nose and throat of Wichita, Kan.; while of unsound mind, shot and killed his two daughters and himself, at his office in Glenwood Springs, Colo., July 21, aged 43.

Theodore Erskine Hamilton, M.D. College of Physicians and Surgeons in the City of New York, 1861; surgeon of the Eighth Connecticut Volunteer Infantry during the Civil War; for many years a member of the staff of the Springfield (Mass.) Hospital; died at his home in Springfield, July 21, from cerebral hemorrhage, aged 80.

Edward Everett Haynes, M.D. Jefferson Medical College, 1890; for three years a member of the New Jersey legislature; postmaster of South Amboy, N. J.; a member of the common council for one term; a member of the board of education; and president of the local board of health; died at his home, June 24, aged 54.

Henry J. MacDonald, M.D. Willamette University, Salem, Ore., 1886; a Fellow of the American Medical Association; local surgeon at Morris Park for the Long Island Railroad; for many years chief of staff of St. Mary's Hospital, Jamaica, N. Y.; died in Long Island College Hospital, July 22, after a surgical operation, aged 62.

Alexander B. McGregor, M.D. Detroit College of Medicine, 1902; a Fellow of the American Medical Association; aged 39; of Cheboygan, Mich.; while responding to a professional call in Cheboygan, in his automobile, was struck by a freight train and instantly killed, July 14.

William Joseph O'Byrne, M.D. Bellevue Hospital Medical College, 1870; for thirty-seven years a practitioner of the Bronx, New York City; died at his home, July 19, from heart disease, aged 69.

David Philip Miller, M.D. Keokuk Iowa Medical College, 1895; of Chicago; a Fellow of the American Medical Association; formerly professor of physiology in Illinois Medical College; died in the Henrotin Hospital, Chicago, July 22, after a surgical operation, aged 41.

Delmso A. Walden, M.D. Rush Medical College, 1870; a surgeon of volunteers during the Civil War, and later a surgeon in the Indian troubles in Nebraska; for many years surgeon of the Burlington System at Beatrice, Neb.; died at his home in that city, July 22.

Henry McCrea, M.D. University of Michigan, Ann Arbor, 1875; Bellevue Hospital Medical College, 1876; for thirty-eight years a practitioner of Marlette, Mich.; coroner of Sanilac County in 1878 and 1879; died at his home in Marlette, recently, aged 70.

Clifford P. Johnson, M.D. University of Kansas, Lawrence and Kansas City, 1909; a member of the Kansas Medical Society; died suddenly at the home of his father in Coffeyville, Kan., from acute dilatation of the heart following typhoid fever, aged 31.

Jacob Jacques Fabian, M.D. Vanderbilt University, Nashville, Tenn., 1907; of Grand Rapids; a member of the Michigan State Medical Society; after rescuing a woman from drowning at Reed's Lake, Mich., July 28, became exhausted and was drowned, aged 30.

Frank E. Courtright, M.D. Starling Medical College, Columbus, Ohio, 1897; a Fellow of the American Medical Association; for fifteen years a practitioner of Shawtown, Ohio; died in Toledo, Ohio, July 21, after an operation for appendicitis, aged 45.

Henry Knox Stratford, M.D. Eclectic Medical College of Pennsylvania, Philadelphia, 1865; Bennett Medical College, Chicago, 1888; surgeon at Camp Douglas during the Civil War; died at the home of his daughter in Austin, Chicago, July 28, aged 92.

Charles Gartner, M.D. Albany (N. Y.) Medical College, 1895; also a graduate of the Albany College of Pharmacy; for nineteen years a practitioner of Brooklyn; died in the Lutheran Hospital in that city, July 25, from heart disease, aged 44.

Charles Segerlund, M.D. Bennett Medical College, Chicago, 1897; a Fellow of the American Medical Association; secretary of the Caledonia (Ill.) Mutual Telephone Company; was instantly killed by a train near Caledonia, July 24, aged 47.

Clarence Cullen Seabrook, M.D. University of Pennsylvania, Philadelphia, 1878; died at his home in Burlingame, Kan., July 11, from the effects of a fracture of the hip received in a fall down cellar in his home a few days before, aged 60.

J. C. Davidson (license, Tenn., 1889); for more than half a century a practitioner of Putnam and Jackson counties, Tenn., and a resident of Pine Fork; died at the home of his brother-in-law near Cookeville, Tenn., July 16, aged 73.

Henry Adolphe Richy, M.D. College of Physicians and Surgeons in the City of New York, 1889; a captain in the French Army during the Franco-Prussian War; died suddenly in his office in New York City, July 18, aged 75.

George Ethelbert King, M.D. Kentucky School of Medicine, Louisville, 1898; for many years a practitioner of Mason County, Ky.; died at the home of his brother near Mt. Carmel, Ky., July 20, from tuberculosis, aged 44.

Michael Francis O'Rourke, M.D. College of Physicians and Surgeons in the City of New York, 1902; a member of the attending staff of St. Vincent's Hospital, New York City; died at his home, from pneumonia, July 22, aged 36.

James Edward Nelson, M.D. Georgetown University, Washington, D. C., 1895; for many years a member of the board of medical examiners in the Pension Bureau, Washington; died at his home in that city, July 22.

Hagop H. Thoumaian, M.D. Northwestern University Medical School, Chicago, 1896; of St. Anne, Ill.; a Fellow of the American Medical Association; died in the Presbyterian Hospital, Chicago, July 18, aged 47.

Leslie Levi Wiles, M.D. Syracuse (N. Y.) University, 1911; a member of the Medical Society of the State of New York; died at his home in Amsterdam, N. Y., July 17, from scarlet fever, aged 24.

William S. Stanfield (license, Tenn., 1889); for more than fifty years a practitioner of Obion County, Tenn.; died at his home in Obion, about July 20, aged 75.

Charles B. Lee, M.D. Southern Medical College, Atlanta, Ga., 1884; a member of the Tennessee State Medical Association; of Edgemoor, Tenn.; died in Scarboro, Tenn., June 23, aged 60.

Walter L. Landrum, M.D. Georgia College of Eclectic Medicine and Surgery, Atlanta, 1910; of Taylorsville, Ga.; was shot and killed in a quarrel near Taylorsville, July 27, aged 37.

Archibald S. Watkins, M.D. Vanderbilt University, Nashville, Tenn., 1893; city health and quarantine officer of Tehuacana, Tex.; died at his home in that city, July 21, aged 62.

John Milton Singleton, M.D. Kansas City (Mo.) Medical College, 1884; a member of the Missouri State Medical Association; died at his home in Kansas City, July 21, aged 57.

Thomas Oliver Keator, M.D. Dartmouth Medical School, Dartmouth, N. H., 1875; formerly health officer of Rochester, N. Y.; died at his home in Accord, N. Y., July 6, aged 60.

Charles Feathers (license, Ark., 1903); of Farmington, Ark.; died in the Fayetteville (Ark.) City Hospital, July 13, a few days after an operation for appendicitis, aged 33.

Edgar Wilard Clark, M.D. Hahnemann Medical College, Chicago, 1868; a veteran of the Civil War; mayor of Neenah, Wis., in 1887; died at his home in Los Angeles, recently.

Andrew Baylies, M.D. New York University, New York City, 1879; a member of the Massachusetts Medical Society; died at his home in Worcester, Mass., July 7, aged 75.

Agnes Benford McCrea, M.D. College of Physicians and Surgeons, Los Angeles, 1913; of San Francisco; died at the home of her parents in Los Angeles, July 23, aged 27.

Jeremiah Chapman Wasson, M.D. Vanderbilt University, Nashville, Tenn., 1880; a Confederate veteran; died at his home near Rhea Springs, Tenn., July 20, aged 77.

Mary Vail Grinnell (license, Vt., 1887); for thirty-four years a practitioner of Vermont; died at her home in Rutland, about July 10, from appendicitis, aged 59.

William W. Farr (license, Miss., 1882); of Bolton, Miss.; aged 65; while making a professional call near that place, July 18, was run down by a train and killed.

James Foster Wilson, M.D. University of Pennsylvania, Philadelphia, 1895; of Philadelphia; died at the home of his brother in that city, July 24, aged 42.

John W. Tuthill, M.D. Eclectic Medical Institute, Cincinnati, 1878; a veteran of the Civil War; died at his home in West Milton, Ohio, July 24, aged 82.

William Wesley Grim, M.D. Western Pennsylvania Medical College, Pittsburgh, Pa., 1892; died at his home in Volant, Pa., July 13, from heart disease, aged 52.

Thomas Arthur McMurtry, M.D. University Medical College, Kansas City, Mo., 1895; died at his home in Carthage, Mo., July 12, from nephritis, aged 43.

Ernest A. Hendricks, M.D. Birmingham, Ala., Medical College, 1908; died at his home in Tuscola, Texas, about July 2, from tuberculosis, aged 30.

John Duke McFaden (license, Kansas, 1901); of Ames, Kan.; died at the home of his mother in Concordia, Kan., June 30, from heart disease.

Elbert A. Moye, Jr., M.D. Jefferson Medical College, 1895; died at his home in Greenville, N. C., July 8, from cerebral hemorrhage, aged 45.

John T. Bowen, M.D. Georgia College of Eclectic Medicine and Surgery, Atlanta, 1889; died at his home in Crawford, Ga., July 14.

Edwin J. Farr, M.D. Castleton Medical College, Castleton, Vt., 1851; died at his home in Eau Claire, Wis., July 10, aged 82.

John V. Hennessy, M.D. Albany, N. Y., Medical College, 1884; died at his home in Albany, N. Y., July 13, from heart disease.

Gillum Taylor Ragan, M.D. University of Georgetown, Washington, D. C., 1866; died at his home in Neogo, Ill., July 9.

Joseph B. Westcott, M.D. Chicago Homeopathic Medical College, 1890; died in Newton County, Ind., about July 8.

George Henry Christie, M.D. McGill University, Montreal, 1872; died at his home in Lachute, Que., May 12, aged 62.

William T. Delaney, M.D. Jefferson Medical College, 1861; died at his home in Bristol, Tenn., July 18, aged 78.

The Propaganda for Reform

In This Department Appear Reports of the Council on Pharmacy and Chemistry and of the Association Laboratory, Together with Other Matter Tending to Aid Intelligent Prescribing and to Oppose Medical Fraud on the Public and on the Profession

THE NEW YORK INSTITUTE OF SCIENCE*

Another Fraudulent Concern Denied the Use of the Mails

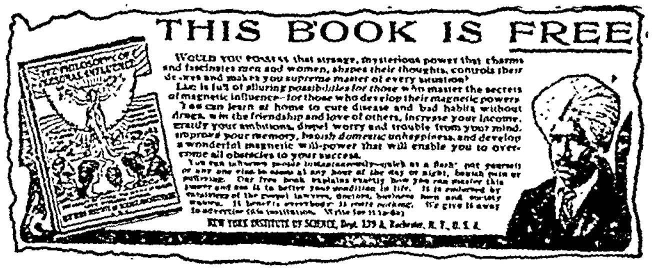
One more of the Neal-Adkin syndicate of frauds was denied the use of the United States Mails when a fraud order was issued against the New York Institute of Science, Rochester, N. Y. E. Virgil Neal, the original president of this concern, has made quackery his life work. Although some of The Journal's readers may remember what has been said about Neal in the past, it is worth while briefly summarizing this arch faker's meteoric career.

Previous to 1900, E. Virgil Neal traveled over the country under the alias X. La Motte Sage, giving alleged exhibitions of hyponotism.

In 1904 he was connected with the "Columbia Scientific Academy," which "taught" palmistry.

In 1905 Neal, with Adkin, conducted the "New York Institute of Physicians and Surgeons." This was put out of business by a fraud order issued Aug. 2, 1905.

In 1906 Neal was operating the "Force of Life Chemical Company." This fraudulent concern sold pills or *tablets* (made to order by Parke, Davis & Co.) and operated what the New York *Times* described as a "grotesquely obvious swindle." The Force of Life Chemical Company was investigated by the federal authorities. When it was found that an influential New York politician, Gen. James R. O'Beirne, was president of it, the "investigation" ceased! The newspaper publicity, however, killed the business.


THIS BOOK IS FREE

Would you possess that strange, mysterious power that charms and fascinates men and women, shapes their thoughts, controls their desires and makes you supreme master of every situation?

Life is full of alluring possibilities for those who master the secrets of magnetic influence—for those who develop their magnetic powers. You can learn at home to cure disease and bad habits without drugs, win the friendship and love of others, increase your income, gratify your ambitions, dispel worry and trouble from your mind, improve your memory, banish domestic unhappiness, and develop a wonderful magnetic will-power that will enable you to overcome all obstacles to your success.

A photographic reproduction reduced of a typical advertisement put out by the New York Institute of Science. This alleged course in hypnotism was sold under the claim: "You can learn at home to cure diseases and bad habits without drugs, win the friendship and love of others, increase your income, gratify your ambitions, dispel worry and trouble from your mind, improve your memory, banish domestic unhappiness, and develop a wonderful magnetic will power that will enable you to overcome all obstacles to your success."

In 1906 also, Neal conducted a bank which is said to have loaned money to small publishing houses, the loans being paid in advertising space in the publications. In the same year, too, Neal started the "Neal Biscuit Company," which later changed its name to the "American Health Products Company."

Other concerns in which Neal has been either directly or indirectly interested are:

To-Kalon Mfg. Co.—A beauty treatment.
Cartilage Co.—Guaranteed to increase the height.
Harriett Meta.—Wrinkle eradicator.
Everett Wood—Cure for baldness.
Roman Solvene Laboratory—Superfluous hair remover.
Okola Laboratory—Eye treatment.
Paris Academy of Beauty Arts—Bust developer.
Dr. Turner Co.—Obesity cure

So much for the activities of E. Virgil Neal. The New York Institute of Science is said to have mulcted the public to the extent of $1,500,000. Briefly, the scheme was to advertise that a free book would be sent to all those interested, explaining how "magnetic influence" and "hypnotic power" might be attained. Those answering the advertisement received a pamphlet describing the alleged "course of study" given by the New York Institute of Science. It contained a list of names of those alleged to be members of the faculty of the "institute." There was no faculty, the names given being either fictitious or those of clerks employed by this fraudulent concern. When cited to show cause why a fraud order should not be issued against it, continuances were granted at the request of the concern's attorney, John J. Vause, and the case was not finally heard until Nov. 17 to 20, 1913. Mr. Vause, by the way, also appeared as attorney for two other frauds operated by the same syndicate, the Cartilage Company and the Okola Laboratory. But the story is well told in the memorandum of the Assistant Attorney-General to the Postmaster-General recommending the issuance of a fraud order. Part of the memorandum follows:

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* A more complete account of this case will appear in pamphlet form, price 4 cents.

WONDERS OF PERSONAL MAGNETISM AND HYPNOTISM
THE PHILOSOPHY OF PERSONAL INFLUENCE
PERSONAL MAGNETISM RULES THE WORLD

Greatly reduced facsimile of the back and front covers of the "free booklet" sent out by the New York Institute of Science. In addition to many fraudulent claims, this booklet contained a list of the alleged "faculty" of the "Institute" made up largely of names of clerks employed by the concern.

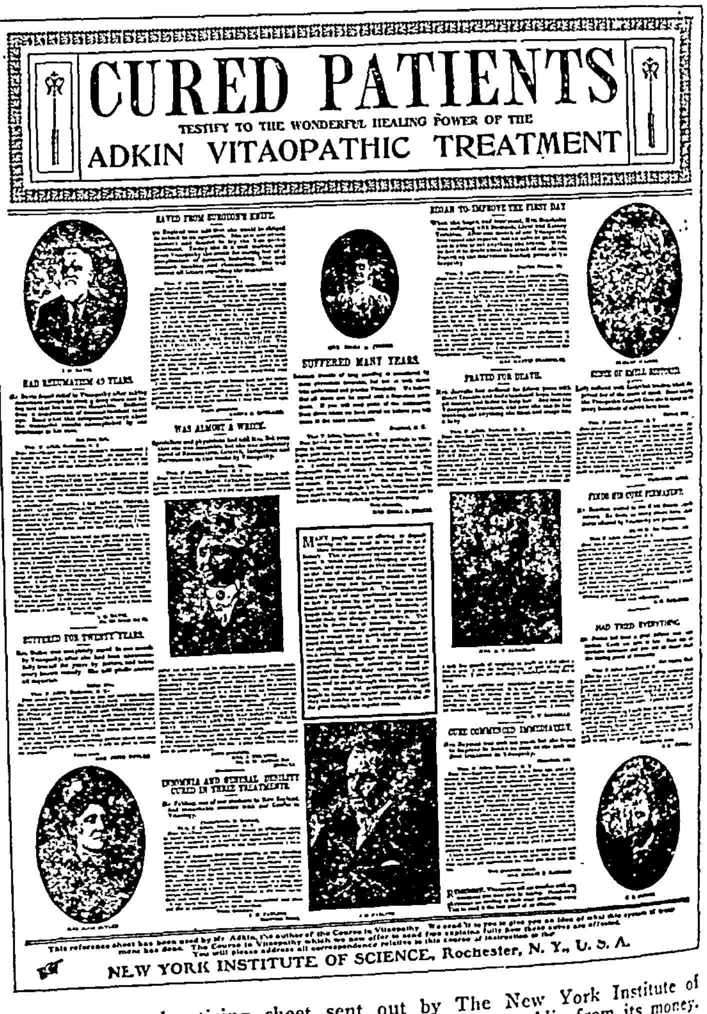
"The New York Institute of Science was incorporated under the laws of the state of New York, Sept. 9, 1899, by X. La Motte Sage, whose true name is E. Virgil Neal, T. F. Adkin, M. N. Adkin, M. H. Neal and B. Hurd. On Jan. 29, 1913, a statement of voluntary dissolution was filed, but prior to that date, that is on Nov. 27, 1912, Charles S. Clark, E. J. MacNamara and K. A. McCormick were incorporated under the laws of the state of Virginia to conduct this same business, under the same name, and at the same place, Rochester, N. Y.

"It is established that X. La Motte Sage, the original president of the concern, has not been connected with it since 1902, and T. F. Adkin, who, it is interesting to note, was the president of the New York Institute of Physicians and Surgeons, against which a fraud order was issued on Aug. 2, 1905, makes affidavit under date of Jan. 10, 1913, that he is not connected with the respondent company. Charles S. Clark has been connected with the business for many years as vice-president and general manager, and in the Virginia articles of incorporation he is named as president, E. J. MacNamara, vice-president, and K. A. McCormick, secretary and treasurer, these three parties being also the incorporators of the Okola Laboratory, the business of which was conducted in the same building, and against which you issued a fraud order on Feb. 16, 1914.

"Evidence in the case is to the effect that one of the publications used by the concern, bearing the title 'Vitaopathy' and written by Thomas F. Adkin, is practically the same as the course on 'Vitaology' used in connection with the business of the New York Institute of Physicians and Surgeons, of which Adkin, as stated above, was president. Other publications used are 'Magnetic Healing' by Thomas F. Adkin, 'Personal Magnetism' by Paul Weller, and a Course in Hypnotism by X. La Motte Sage. The mails were also closed against the circulation of these publications by means of the fraud order of 1905 against the New York Institute of Physicians and Surgeons. In promoting the business of the last named concern prominence was given to the course in 'Vitaology' or 'Vitaopathy,' the course in hypnotism being subordinated, whereas in the business of the New York Institute of Science prominence is given to the Sage course in hypnotism, 'Vitaopathy' being secondary."

Some of the advertisements which the New York Institute of Science issued are then described in detail, and Judge Lamar points out that the free book which the advertisement offers to the public is not a scientific treatise, as might be inferred, but merely an advertising pamphlet containing, among other things, a list of the alleged faculty of the New York Institute of Science.

Then follows the Assistant Attorney-General's description of the method by which the New York Institute of Science attempted to deceive the public by giving the impression that X. La Motte Sage was a man of high educational rank. The memorandum further states that letters from various educators at Rochester, N. Y., show that the members of the "faculty" of the New York Institute of Science were unknown to them and that the "institute" itself had never been recognized by them as an institution of learning. It then continues:


CURED PATIENTS
TESTIFY TO THE WONDERFUL HEALING POWER OF THE
ADKIN VITAOPATHIC TREATMENT
NEW YORK INSTITUTE OF SCIENCE, Rochester, N. Y., U. S. A.

Another advertising sheet sent out by The New York Institute of Science in its attempt to separate the credulous public from its money. The "institute" professed to give instruction in what it called the "Vitaopathic Treatment" of disease. This advertisement consisted of testimonials from persons alleged to have been cured by "Vitaopathy."

"Embracing two pages of the booklet under the caption 'Endorsed by Colleges and Universities,' are what purport to be facsimiles of five letters on the letter-heads of institutions of learning, speaking in complimentary terms of Dr. X. La Motte Sage, dated in the years 1889, 1897 and 18[illegible], in none of which is mention made of the New York Insti-

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te of Science, and necessarily so, as the corporation of at name was not organized until 1899.

"Another page in the booklet is devoted to what purport be excerpts from different newspapers dated 1896, 1897, 98, and all of which refer personally to Dr. Sage. Beneath ese clippings the statement is made:

> 'We have testimonials and press clippings almost without number, all tifying to Dr. Sage's wonderful success. After the founding of the w York Institute of Science Dr. Sage ceased to give public permances and to deliver lectures, and devoted his entire time to the erests of the institution and its pupils."

'It is admitted by respondent 'that this institute has held t Dr. X. La Motte Sage as the president of same,' and in ense urges that 'this is not a material representation' and t 'the fact that whether Sage was or was not the presit of the institute seems to be highly immaterial in view the fact that the course of instruction was by correndence.' An examination of the excerpts from the bookset out above, however, and of the matter described in ef also appearing therein, shows that the so-called endorsents of colleges and the excerpts from newspapers relate Dr. Sage personally, and are clearly depended on by ondent to lend an educational character to its business l to reflect credit on it, for the purpose of deceiving the vary. Further, the representation is material in view of pretense that 'students' can always write to Dr. Sage or of his corps of professors and obtain their opinion on question or difficulty.

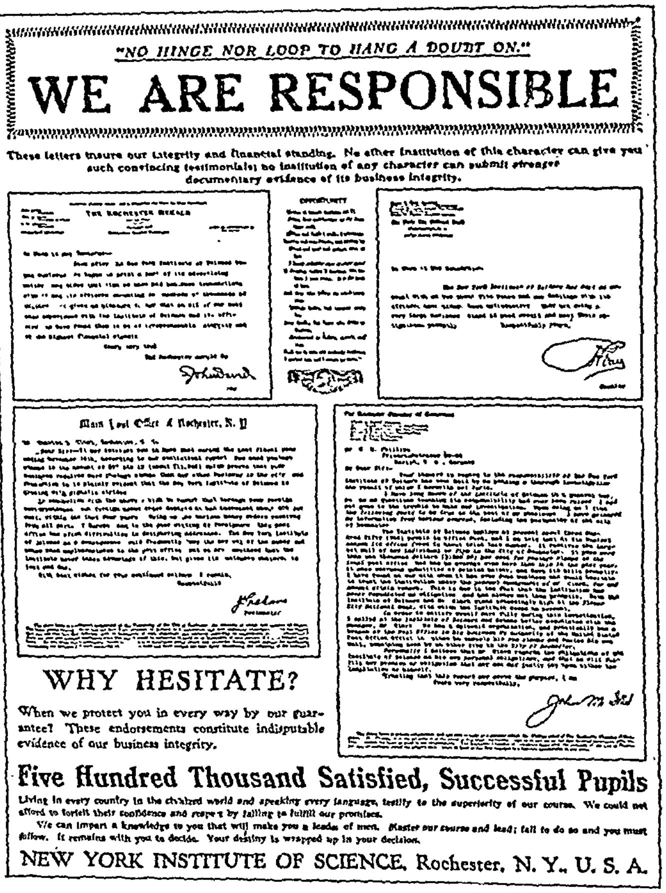
There is in fact no 'faculty' nor is this concern an 'Institute of Science.' It is in fact nothing but a mail-order eme in which pamphlets and books are being sold under e false and fraudulent representations herein quoted. The persons represented as constituting the 'faculty' are in the main merely clerks and the officers of the corporation. It is significant that some of the names appearing in this alleged 'faculty' were connected with the Institute of Physicians and Surgeons against which a fraud order was issued several years ago. It also appears from the evidence that X. La Motte Sage, whose true name is E. Virgil Neal, has not been connected with this concern for a number of years and further that a number of the members of the 'faculty' became associated with the respondent years after Sage had severed his connection therewith. Regardless of this fact the company continues to represent that Sage is the president of the 'Institute' and that his personal advice is available to 'students.' While Sage and Dr. Wharton and Rev. Paul Weller are purported to have written certain of the pamphlets used by this concern in instructing its pupils, as a matter of fact they are not connected with the 'Institute' and their advice is not available to the people who buy this course of instruction.

The government officials then discussed in detail the various claims made by the New York Institute of Science. These claims were analyzed in detail and their absurdity and fraudulence shown. Particular stress was laid on the fact that the "institute" claimed to be able to make hypnotists of anybody, regardless of age, sex, education or personality, and that, in fact, it apparently, made a special bid for the illiterate. Attention also was directed to the claim made that the "course of instruction" was originally sold for $25 when, as a matter of fact, the "course" never sold for more than the $5 asked for it in the follow-up letters.

In considering the case against the New York Institute of Science, the government called in noted alienists who had investigated the subject of hypnotism and brought out the following facts: In hypnotism there are two controlling factors, the first and more important being the individuality or personality of the subject, and particularly, his willingness to be hypnotized; the second, is the individuality or personality of the operator. As one of the physicians testified: "The capacity of being hypnotized is a thing resident in the person and not a force which comes from the outside—from the operator." The whole trend of the claims made by the New York Institute of Science was exactly the opposite of this; that is, that the hypnotic power is one possessed by someone who can use it and produce results over someone else and that the New York Institute of Science could develop this alleged power in its "students." The memorandum continues:

"The purpose of the promoters in making these representations is to lead the reader of its advertising literature to believe that this concern will impart to him this wonderful power and ability to hypnotize and control anyone under any circumstances and thus to subject to his own will whomsoever he pleases, and thereby to deceive them into remitting $5 for this so-called course of instruction.

"Despite the positive and emphatic representations calculated to create the contrary impression the respondent in its brief admits that 'everyone cannot be hypnotized' and that 'it is practically impossible to hypnotize a man who is not willing to do as you say,' and the testimony of the experts introduced was also to this effect.



"NO HINGE NOR LOOP TO HANG A DOUBT ON."

WE ARE RESPONSIBLE

These letters insure our integrity and financial standing. No other institution of this character can give you such convincing testimonials; no institution of any character can submit stronger documentary evidence of its business integrity.

THE ROCHESTER HERALD

WHY HESITATE?

When we protect you in every way by our guarantee? These endorsements constitute indisputable evidence of our business integrity.

Five Hundred Thousand Satisfied, Successful Pupils

Living in every country in the civilized world and speaking every language, testify to the superiority of our course. We could not afford to forfeit their confidence and respect by failing to fulfill our promises.

We can impart a knowledge to you that will make you a leader of men. Master our course and lead; fail to do so and you must follow. It remains with you to decide. Your destiny is wrapped up in your decision.

NEW YORK INSTITUTE OF SCIENCE, Rochester, N. Y., U. S. A.

A reduced facsimile of a sheet, three square feet in size, sent out by the New York Institute of Science in its attempt to impress the public with its responsibility and honesty. The sheet contained reproductions of four letters. One was from the president of the Rochester *Herald*, who states that the "Institute of Science and its officers" are "of irreproachable integrity." The cashier of the Flour City National Bank, Walter B. Duffy, President, testifies that the bank's dealings with the New York Institute of Science "have always been satisfactory." The Rochester Chamber of Commerce comes to the defense of this fraudulent concern by stating that it employs 350 people, uses more than $1,000 worth of postage stamps each week and "pays its bills promptly." The fourth letter is from the postmaster of Rochester who praises the "institute"—possibly because it used over $57,000.00 worth of stamps a year—and states that he is convinced that the institute "gives its customers whatever is just and due." The New York Institute of Science commenting on the postmaster's letter says: "Do you think that a postmaster, whose business it is to investigate postal affairs and prosecute frauds, would express his satisfaction concerning our business if it were conducted on a fraudulent basis and there existed the least doubt concerning the reliability of the institute?"

"Evidence was introduced showing that in a number of instances testimonials published by the 'Institute' were solicited and procured upon promise to furnish books free.

"For years the Department has been flooded with complaints against this concern from people claiming to have been defrauded and it is estimated that this concern has mulcted the public to the extent of $1,500,000.

"I find that this is a scheme for obtaining money through the mails by means of false and fraudulent pretenses, representations and promises in violation of Sections 3929 and 4041 of the Revised Statutes, as amended, and I therefore recommend that a fraud order be issued against the New York Institute of Science, Inc., and its officers and agents as such".

The fraud order was issued.

Correspondence

Warning as to Use of Hay-Fever Toxin

To the Editor:—Since the publication of my article on hay-fever in The Journal, July 11, 1914, p. 141, I have been receiving so many letters of inquiry that it is impossible to give each one a reply.

I tried to make clear the fact that in its present form the method is not suited for general use. What I wrote was intended only for the laboratory worker with a thorough knowledge of the principles of immunity; such men can easily prepare their own toxin and vaccines and, after some study and experimentation, should be able to use the method successfully.

All others should leave it alone. The toxin is as potent as tuberculin and requires fully as much judgment and care for its administration. I have seen some alarming reactions from it and am convinced that in some cases a dose sufficiently large would prove fatal. Any physician who, without the necessary skill and experience in such work, attempts its use is liable to acquire some very useful, but extremely painful, experience.

The pollens are not on the market so far as I know; and the toxin is too unstable to be marketed successfully. I hope you will be able to give this space in the next issue of The Journal.

R. C. Lowdermilk, M.D. Galena, Kan.

Technic for Obtaining Placental Serum

To the Editor:—I have received a large number of inquiries as to the technic in obtaining placental serum, mentioned in my paper, "Treatment of the Toxemias of Pregnancy" (The Journal, July 11, 1914, p. 158). The method is as follows: After the delivery of the child the cord is cut and the blood is allowed to flow freely from the placental end. A sterile flask collects the blood, which is then placed in a refrigerator until there is complete separation of the serum from the other elements of the blood. If the serum is perfectly clear and yellowish in color it may be used without further preparation; but if it is not, it may be centrifuged under aseptic precautions and then made perfectly clear.

A. J. Rongy, M.D., New York.

Queries and Minor Notes

Anonymous Communications and queries on postal cards will not be noticed. Every letter must contain the writer's name and address, but these will be omitted on request.

EFFECTS OF VESICULECTOMY

To the Editor:—1. What effect on the general health would be produced by the removal of one seminal vesicle and of both? What effect on the power of procreation would be produced by the removal of both seminal vesicles?

2. Would removal of one be indicated if chronic inflammation persisted in it for years, with many exacerbations resulting from slight causes or causes not obvious; also by ordinary methods of treatment such as stripping, hot-water rectal lavages, suppositories, etc., the exacerbations being accompanied by spasmodic condition of pylorus and resulting symptoms of headache, vomiting of intensely acid stomach contents, etc., and the disease causing many fatigue symptoms, of the neurasthenic order and therefore much discomfort to and disability of the patient?

Ira W. Chapman, M.D., Pittsburgh.

Answer.—1. As seminal vesicles are not found in carnivora, and as the experimental removal of them from other animals entails no appreciable impairment of health or procreative capacity, the presumption seems warranted that these vesicles are, in the human subject also, accessory rather than essential to general and sexual health. Yet this presumption still lacks ample clinical confirmation in man; for the extirpation of one or both vesicles is seldom performed, perhaps because it is a formidable operation, entailing about 10 per cent. mortality. Less than one hundred vesiculectomies are recorded in the literature; and most of these were made for the relief of serious diseases (for instance, tuberculosis) whose effects overshadow the mere loss of the vesicles. Yet there are cases on record in which the human subject has enjoyed normal health after the removal of one or both vesicles.

2. "Chronic inflammation" designates an anatomic condition only; this condition in the vesicles is usually due to an infection, by the gonococcus, pus bacteria or tubercle bacillus. The non-tuberculous infections have been frequently cured by drainage of the vesicle from the perineum (vesiculotomy) as practiced by Fuller, and by irrigation and medication of the vesicle through the vas deferens, devised by Belfield. An infected vesicle (non-tuberculous) should be treated by one of these safer methods before extirpation is considered.

EHRLICH'S HEMATOXYLIN STAIN

To the Editor:—In an article on "The Invariable Blood-Stain," *by B. G. R. Williams* (The Journal, *Nov.* 1, 1913, p. 1627), there was published the formula of a blood-stain under the title of "invariable." May I ask how the "three months' ripened *Ehrlich's hematoxylin*" is prepared. Is this a watery or an alcoholic solution? Is the solution made and then permitted to stand for three months? A detailed account of how this stain may be prepared ready for use will be greatly appreciated.

William H. Best, M.D., Brooklyn.

Answer.—The following directions are given for the preparation of Ehrlich's acid hematoxylin:

Hematoxylin crystals		2 gm.
Absolute alcohol		60 c.c.
Glycerin	60 c.c.	saturated with ammonia alum.
Water	60 c.c.	
Glacial acetic acid	3 c.c.	

The solution is to be exposed to the light for a long time until it acquires a deep-red color. If it then be kept carefully stoppered, its staining powers will remain constant for years. The acetic acid is added to prevent the formation of insoluble compounds of hematein and as a decolorizer to limit the stain to nuclei.

It is suggested that the alum, hematoxylin and water be combined and the solution allowed to ripen for two or three weeks before adding the other ingredients, which have a tendency to prevent oxidation. The fully ripened solution would then be obtained more quickly and surely. As can be readily seen, this is an aqueous solution with the addition of alcohol and of glycerin. The time of standing begins with the preparing of the solution.

HECTINE IN HAY-FEVER

To the Editor:—A patient of mine brought a clipping to me in which Hectine is recommended *in the* treatment of hay-fever, *asking me to* advise him as to the *reliability of this remedy.* Please give me some *information* regarding it.

W. H. H., South Bend, *Ind.*

Answer.—Hectine is a French proprietary and is stated to be, chemically, sodium benzosulphoamino-phenyl-arsenate. If the asserted composition is correct, Hectine is similar to atoxyl, which is described in New and Nonofficial Remedies, 1914, page 38. Hectine has not been examined by the Council on Pharmacy and Chemistry. Arsenic has been employed in the treatment of hay-fever with apparent success in some instances, but there is no reason to suppose that the proprietary Hectine will act better than other forms of arsenic, such as atoxyl.

Medical Economics

This Department Embodies the Subjects of Post-graduate Work, Contract Practice, Legislation, Medical Defense, and Other Medicolegal and Economic Questions of Interest to Physicians

Fee-Splitting and Commission

The Nebraska State Medical Association has taken a positive stand on the question of fee-splitting and has directed its council, through a standing committee created for the purpose, to institute an investigation whenever a member is accused of this practice. The council has defined the term "fee-splitting" as follows:

> "In order that there may be no misconception, . . . the Board of Councilors hereby specifies that where a patient is referred by one physician to another, neither one shall handle or transmit any part of the patient's funds which is to go to the other. Each physician must render a separate account for his services as operator, counselor, companion, anesthetist or assistant, and neither physician shall in any such case collect or transmit any part of the other's fee. Failure to observe this rule shall be considered prima-facie evidence of fraud. The board realizes that in making this interpretation of the resolution it will prevent a number of perfectly innocent transactions; but it feels that such interpretation is necessary to prevent fraud in the guise of innocence. It is not meant by this, however, to prevent a surgeon or specialist from including in his bill the accounts of his ordinary assistants, provided that they are not concerned in the reference of the case in question. Nor shall it be held to prevent any physician from collecting the fee for Roentgen ray or other laboratory work done for him by another, provided that the amount of such collections be specified in the bill."

Medical Education and State Boards of Registration

Higher Preliminary Requirements

It is reported that the Alabama State Board of Medical Examiners has passed a ruling that on and after Jan. 1, 1919, all candidates for license to practice medicine in Alabama must present credentials showing that prior to entering on the study of medicine they have completed two years of collegiate work including courses in physics, chemistry, biology and a modern language in addition to a standard high-school education. This will apply to all students matriculating for the session of 1915-16 and thereafter.

Medical Council of Canada

Dr. R. W. Powell, registrar of the Medical Council of Canada, reports that the next regular examination of that council will be held at Montreal, Oct. 13, 1914.

A candidate must either be a licensed practitioner of some province of Canada, or not being so, must present to the registrar a certificate from a provincial registrar that he has fulfilled all the requirements of a province and is therefore qualified to go up for the examination for the provincial license. The fee is $100, and papers, etc., must be deposited with the registrar, Dr. R. W. Powell, 180 Cooper Street, Ottawa, Ont., at least four weeks before the date set for the examination.

Oklahoma April Report

Dr. John W. Duke, secretary of the Oklahoma State Board of Medical Examiners, reports the written examination held at Oklahoma City, April 14-16, 1914. The number of subjects examined in was 10; total number of questions asked was 100; percentage required to pass was 70. The total number of candidates examined was 15, of whom 11 passed and 4 failed. Nineteen candidates were licensed through reciprocity. The following colleges were represented:

PASSED

College	Year Grad.	Per Cent.
University of Arkansas	(1911) 73; (1912) 70; (1913)	75
Northwestern University	(1902)	79
University of Illinois	(1913)	86
College of Phys. and Surgs., Baltimore	(1907)	89
American Medical College, St. Louis	(1911) 77; (1912)	75
University Medical College, Kansas City	(1912)	89
Ohio Medical University, Columbus	(1903)	82
University of Pennsylvania	(1912)	88

FAILED

College	Year Grad.	Per Cent.
College of Phys. and Surgs., Little Rock	(1910)	48
University of Arkansas	(1912)	67
College of Medicine and Sargery, Chicago	(1903)	61
Vanderbilt University	(1893)	63

LICENSED THROUGH RECIPROCITY

College	Year Grad.	Reciprocity with
Jenner Medical College	(1898)	S. Dakota
University of Maryland	(1901)	W. Virginia
Beaumont Hospital Medical College	(1897)	S. Dakota
Marion-Sims College of Medicine	(1899)	Texas
Missouri Medical College	(1899)	Tennessee
St. Louis College of Phys. and Surgeons	(1910)	New Mexico
St. Louis University	(1907)	W. Virginia
University Medical College, Kansas City	(1894)	Tennessee
Cornell University	(1899)	New Mexico
Knoxville Medical College	(1909)	Tennessee
Meharry Medical College	(1910) Arkansas; (1912)	Tennessee
Universities of Nashville and Tennessee	(1910)	Tennessee
University of Tennessee	(1887) Texas; (1900-2)	Indiana, W. Virginia
Southern Methodist University Med. Coll	(1912)	Texas
Texas Christian University	(1913)	Texas
University of Dallas, Med. Dept	(1901)	Texas

Book Notices

The Practice of Medicine. A Text-Book for Practitioners and Students, with Special Reference to Diagnosis and Treatment. By James Tyson, M.D., LL.D., and M. Howard Fussell, M.D., Professor of Applied Therapeutics in the University of Pennsylvania. Sixth Edition. Cloth. Price $5.50. Pp. 1211, with 185 illustrations. Philadelphia: P. Blakiston's Son & Co., 1914.

Tyson's practice has been recognized from the first as a practical and satisfactory guide in its important field and has won for itself a high place in the esteem of the large number of physicians who have used it. The various subjects have been given careful revision, but so rapid is medical advance that even numerous new editions cannot keep pace with the latest established methods of treatment, discoveries in pathology, etc. Thus we find that even Tyson fails to mention the emetin treatment of amebic dysentery (although the ipecacuanha treatment is described). The discovery of the *Spirochaeta pallida* in the brain in paralytic dementia is also overlooked. Among the many new subjects added, pellagra is perhaps most important. In the consideration of this subject the author has had the collaboration of Dr. Edward Jenner Wood, author of a work on the disease. Dr. Spiller has also revised his own section on nervous diseases. Through the deletion of considerable unnecessary historical matter the book is no larger than in former editions, and remains a splendid work on practice.

Diseases of the Heart. By John Cowan, D.Sc., M.D., F.R.F.P.S., Professor of Medicine, Anderson's College Medical School. With chapters on the Electro-Cardiograph by W. T. Ritchie, M.D., F.R.C.P., Physician, Deaconess Hospital, and the Ocular Manifestations in Arteriosclerosis, by Arthur J. Ballantyne, M.D., F.R.F.P.S., Surgeon, Eye Infirmary, Glasgow. Cloth. Price $4.00 net. Pp. 458, with 199 illustrations. Philadelphia: Lea & Febiger, 1914.

In this book there is presented in condensed, yet reasonably complete manner, the modern views of diseases of the heart. The results of the study of such disease by the polygraph, electrocardiograph, sphygmomanometer and Roentgen ray are clearly described. Bacteriologic features are included as in the discussion of acute endocarditis. Chapters are found with titles strange to text-books of a decade ago, on the myogenic theory, stimulus production, nodal rhythm, con-been defrauded and it is estimated that this concern has mulcted the public to the extent of $1,500,000.

"I find that this is a scheme for obtaining money through the mails by means of false and fraudulent pretenses, representations and promises in violation of Sections 3929 and 4041 of the Revised Statutes, as amended, and I therefore recommend that a fraud order be issued against the New York Institute of Science, Inc., and its officers and agents as such."

The fraud order was issued.

ergraduates.

Guide to the Microscopic Examinatience R. Greeff, Director of the University Ophthalmic Charity Hospital, Berlin, with the Cooperation of and Professor Wintersteiner. Translated from the Third Ger.. Edition by Hugh Walker, M.A., M.B., C.M., Ophthalmic Surgeon to the Victoria Infirmary, Glasgow. Cloth. Price $2.00 net. Pp. 86, with six illustrations. *New York: Paul B. Hoeber, 1913.*

This admirable work is a reprint of a number of articles published in the *Ophthalmoscope* during the past year. As there is no recent work in English that deals in their entirety ith the methods employed in the microscopic examination the ocular tissues, this work of Greeff ought to be doubly lcome. The preparation of ocular material for sectioning, including the formulas of the various hardening fluids, stains, etc., as well as the processes followed in histologic examinations, are fully described in the general part, while a second, or special part, deals with the problems that arise in examining particular tissues and organs of the ocular apparatus. The contributors to this volume have done their work well and have left little to be desired, whether one uses it as a laboratory vade-mecum, or as a book of reference in which to find, for example, an exact description of Marchi's method or the formula of Erlitzki's fluid. The pages devoted to comparative ophthalmology are an interesting phase of this work. Concurrently with an account of the methods most desirable in the investigation of human eyes (including a short account of them), parallel findings in the lower animals are discussed. These studies in comparative histology ought to be of considerable value to investigators; they are found nowhere else, so far as we know, in any English text-book. The translation is well done and is singularly free from the Teutonisms that characterize so many books derived from German literature.

The Road to a Healthy Old Age—Essays Lay and Medical. By Thomas Bodley Scott. Cloth. Price, $1 net. Pp. 104. New York: Paul B. Hoeber, 1914.

It is seldom that we meet a work of medical literature that charms by its style as much as by its subject-matter and gives so much sound advice in so pleasant a manner as the book before us. The author is qualified to speak from experience, for he has gone a good part of the way himself, and if it is impossible to mark the point at which healthy old age may be said to begin, he is clear on the question of what constitute the chief pathologic features which threaten the aging man on his journey. Arteriosclerosis as the result of chronic intemperance of various sorts is the chief danger. The author preaches temperance as the crowning virtue of old age and the prophylactic against its evils. He is not content with the mere recommendation of temperate habits, but he also reviews the drug treatment of the chief symptom of hardening arteries, namely, high blood-pressure, and points out the possibility of preventing the worst consequences of previous pathologic changes. Having in the second chapter discussed the treatment of arteriosclerosis, he devotes the third chapter to the other danger of old age, the chronic infections of the respiratory tract. These are treated, it is maintained, with great success, from the most advanced point of view of vaccine therapy. The author asserts that only autogenous vaccines promise successful results. Consequently he appends an outline of the method of preparation and action of the vaccines. A more general trial of vaccines applied in this way could do no harm, for the vaccines are autogenous and hence calculated to meet an

resulting symptoms of headache, vomiting of intensely acid stomac contents, etc., and the disease causing many fatigue symptoms, of th neurasthenic order and therefore much discomfort to and disability o the patient?

Ira W. Chapman, M.D., Pittsburgh.

Answer.—1. As seminal vesicles are not found in car nivora, and as the experimental removal of them from othe animals entails no appreciable impairment of health o procreative capacity, the presumption seems warranted tha these vesicles are, in the human subject also, accessory rathe than essential to general and sexual health. Yet this pre sumption still lacks ample clinical confirmation in man; fo the extirpation of one or both vesicles is seldom performed perhaps because it is a formidable operation, entailing abou 10 per cent. mortality. Less than one hundred vesiculectomies are recorded in the literature; and most of these wer made for the relief of serious diseases (for instance, tuberculosis) whose effects overshadow the mere loss of th tained by Yet there are cases on record in which the human A better authority to cover the after the removal of one nucleic acids and their products could not have been selecte for much of the best work on their physiologic conduct ha come from the laboratory of Jones. This monograph shoul be especially interesting to physicians, for the nucleic acid and the purins derived from them, occupy a prominent plac in medical literature. Here can be found the facts concern ing that much-exaggerated and overabused fetish, uric aci stripped of the glamor furnished by futile methods an sho pseudoscientific enthusiasm. The time has passed tirp when question the dominant importance of uric acid in huma disease made the heretic a fit subject for the sta ake. It i well that physicians now have accessible reliable in formation coming from the biochemists, who have not been under the spell of the uric acid diathesis and its sovereign, lithia water.

Materia Medica for Nurses. By A. S. Blumgarten, M.D., Instructor in Materia Medica at the German Hospital Training School for Nurses, New York. Cloth. Price, $2.50. Pp. 644. New York: The Macmillan Company, 1914.

The appearance of a work for nurses on materia medica nearly as large as the more important works on pharmacology intended for physicians may strike one as unnecessary and tending to invade the province of the physician. This is not, however, the case with the present work. The author explains that the nurse needs to be a trained observer and must know the action of medicines in order to observe accurately the effects that are obtained. The actions of medicines are therefore taught with enough of physiology as a foundation to enable the nurse to detect any untoward symptoms or the action of an overdose. Therapeutics are excluded because the nurse is never called on to treat patients, nor should she ever do so without orders from a physician. The administration of remedies receives particular attention. The treatment of poisoning is given in detail under the individual drugs. A large number of drugs are described, including, in addition to official preparations, the more prominent proprietary synthetics.

What Men Live By: Work, Play, Love, Worship. By Richard C. Cabot, M.D., Assistant Professor of Medicine, Harvard University. Cloth. Price, $1.50. Pp. 336. Boston: Houghton, Mifflin Company, 1914.

These essays on practical ethics lead to a definite end, but each is sufficient in itself. References to the life of the physician crop out, but not more so than references to other topics. Each point is made through living examples, and no walk of life has been neglected. Therefore the book is adapted to being picked up at odd moments and read at random. If the author did not intend this, he should not have made the book so interesting. It is an in of what he himself has noted: "'Any one who we says Ostwald, . . . 'will find something new.' me- thing' is usually found, accidentally as we looking for something else. It is in this results from taking infinite pains. It pro never looked for, yet something which with pains could never have come to light."

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"In order that there may be no misconception, [illegible]uition Board of Councilors hereby specifies that wh[illegible] great a[illegible] to operators of the is referred by one ph[illegible] Bland-Sutton, in the address in surgery, delivered at the eighty-second annual meeting of the British Medical Association, August, 1914, points out that the discovery of leukemia contra-indicates removal of an enlarged spleen because the extirpation of a leukemic spleen is always followed by death.

The attempt to influence the soil favorably in advance of an operation, as by the administration of hexamethylenamin before operations on the brain or spinal cord, shows the efforts of the surgeon to turn biologic or physiologic investigations to practical account. Bland-Sutton suggests that "it is probable that compounds will be discovered that can be injected into the cerebrospinal fluid and cause gliomas to shrivel in the same way that gummas disappear under potassium iodid, mercury or salvarsan, and thus abolish some of the most uncompromising operations of modern surgery."

In the treatment of malignant disease, as Sutton points out, the surgeon meets problems that arise from the infection of cancerous tissue by virulent organisms foreign to the cancer itself. In order to cure such cases, surgeons must find some way of sterilizing them or a specific remedy must be found for cancer. There are indications, he says, that both methods will be available.

Sutton sketches the character of the surgeon of the future:

"Surgeons are of two types: they are either craftsmen or biologists. The surgical craftsman invents variations in technic: metal plates, wires and screws for bones, or fancy methods of suturing wounds. Some expend their ingenuity on surgical cutlery and improve the knives and needles. The utility of a simple tool such as the clip forceps is inestimable. In spite of much ingenuity among surgeons, an ideal ligature material awaits discovery. Clever contrivances like the laryngoscope, bronchoscope and cystoscope have revolutionized special branches of surgery. Another useful instrument, the esophagoscope, requires for its successful use a surgeon with the instincts of the sword-swallower and the eye of a hawk. Recently through the kindness of my colleague, Alfred Johnson, I witnessed through the cystoscope a stone slowly extruded from the vesical orifice of the ureter.

"The biologic surgeon studies pathology in its broadest aspect and investigates, in the laboratory, problems of morbid anatomy and bacteriology. The diagnostic value of reports issued from the laboratory by the pathologist and the bacteriologist, to be of value, must be estimated with the help of clinical experience. If the surgeon has had no experience in the bacteriologic methods he must accept the reports from the laboratory with the hopefulness of a patient swallowing physic compounded from a prescription he does not understand and which he is often unable to read. The training of surgeons in clinical pathology is of great importance, and it requires little foresight to recognize that for men ambitious to attain high places in surgery the high road lies through the pathologic institute.

"Morbid histology has been and still is of great use in classification, diagnosis and prognosis of morbid growths; for a knowledge of their cause new methods are required. For those we fix our attention on the men along the skyline—bacteriologists, experimental physiologists, physiologic chemists and physicists; the future lies with them. As it

and 4 failed. Nineteen candidates were licensed through reciprocity. The following colleges were represented:

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Ohio Medical University, Columbus	(1903)	82
University of Pennsylvania	(1912)	88

FAILED

College	Per Cent.
College of Phys. and Surgs., [illegible]	
University of Arkansas	
College of Medici[illegible]	
Vand[illegible]	

[illegible] be witness[illegible] of large cities, but [illegible] by streptococci and the coli group, [illegible] resistant to chemotherapy. There is some-[illegible] fascinating in submitting septic morbid growths to what Ehrlich picturesquely terms a 'bacteriologic siege.' Our difficulty is to destroy these seeds of disease without serious damage to the organs and the delicate tissues in which they flourish. The antiseptic solutions employed against bacteria are powerful cell poisons. We need therapeutic agents which destroy parasites but do not kill the tissues of the host. Acute minds are busy with these problems, and surgeons may hope to remove visceral cancer with no more risks than attend gastrojejunostomy or hysterectomy for fibroids."

Formation of Hydrochloric Acid in the Foveolae and on the Surface of the Gastric Mucous Membrane, and the Non-Acid Character of the Contents of Gland-Cells and Lumina

B. C. H. Harvey and R. R. Bensley (Biol. Bull., September, 1912, p. 225) report some striking experiments on the place of formation of hydrochloric acid in the actively secreting mammalian stomach. They show that, contrary to the generally accepted belief, free hydrochloric acid is not formed within, nor does it occur within, the gastric glands themselves. The results of their investigations "demonstrate that only non-acid substances are formed by the glands, and that the contents of the gland-cells and lumina are not acid, even when hydrochloric acid is being actively formed on the surface of the mucous membrane. . . . The contents of the parietal cells and of the lumina of the gastric glands are not acid but neutral or alkaline."

"Heidenhain, Langley and others were able to associate other secretory functions of the gastric mucous membrane very definitely with other cells. This left the parietal cells and the formation of hydrochloric acid. Further, Miss Greenwood and afterward Macallum and Miss Fitzgerald have shown that chlorids are more abundant in the parietal cells than in other parts of the gland. These facts suggest that there is some association between the formation of the hydrochloric acid and the parietal cells. . . . The parietal cells probably form substances which later furnish the chlorin of the hydrochloric acid." It will be remembered that Claude Bernard (in 1877) was forced to conclude from his classic experiments with his Prussian blue reaction that "the acid of the gastric juice is formed only after the secretion of the juice, the glands secreting a liquid which breaks up into an acid fluid and another product as yet not definitely determined." By the same method and by entirely new microchemical methods Harvey and Bensley have confirmed and extended these observations of the great French physiologist.

The most beautiful and positive results obtained by Harvey and Bensley were those in which cyanamin was used as indicator for the hydrochloric acid. This dye in the presence of hydrochloric acid forms a bichlorid with a deep blue color. In the presence of alkalies it gives a red reaction. Small pieces of fresh actively secreting stomach mucous membrane from various laboratory animals were cut out and stained in cyanamin. It was found that, with the exception of dead cells and the special cells of Heidenhain, "the dye is entirely confined to the secretion in the lumina of the glands and their various diverticula, including the whole basket-work of canaliculi in the parietal cells—all of which was intensely stained. Moreover, in no place in this system of gland tubules below the level of the gastric foveolae was the and the end of the sixth week, in addition to these measures, tampons of glycerotannin should be used every third or fourth day. They should be put in either after first replacing the uterus or with the patient in the knee-chest position, and serve not only to hold the uterus forward but to reduce it in size. The tampons may be used without jeopardizing the end results of operations for the repair of the perineum. Before the end of the sixth week the use of a pessary is contra-indicated. After this time a pessary should be used when retroversion is present. In favorable cases the uterus will remain forward, become firm and small and the patient is cured.

Should the displacement recur and the uterus still remain larger than normal, a round elastic ring pessary will hold it up comfortably and will still permit the use of douches. In three or four weeks it should be changed to the ordinary hard-rubber retroversion pessary. The vagina and perineum by this time will have decidedly more tone, lacerations will have healed and the fitting of this form of pessary becomes a simple matter. During the time that a pessary is worn, the patient should assume the knee-chest position for five minutes twice a day. She should also take a douche once a day, attention should be given to her diet, her bowels carefully regulated and the amount of exercise or exertion she is allowed to take carefully supervised.

3. **Operation for General Enteroptosis.**—In the operation described by Vineburg a long median incision is made, extending from the umbilicus to the pubis. The patient is placed in the extreme Trendelenburg position and the intestines are packed away, as much as possible, into the upper abdominal cavity by suitable gauze pads. An assistant with flexed hand and fingers spread out holds the intestines away from Douglas' cul-de-sac. Another assistant with a gauze pad held in a long gauze-holder, pushes the body of the uterus downward in the anterior pelvic space. Douglas' cul-de-sac is thus rendered empty and is exposed fully. A fold of peritoneum is caught on either side, as far down as one can possibly succeed in getting and the two folds are sutured together by a continued suture, either of catgut or Pagenstecher thread. The formation of this first shelf is the most difficult part of the operation. The next shelf is made in the same manner, a fold of peritoneum taken on either side, about 2 inches above the first sutured. When this suture reaches the posterior wall of the cavity, it is made to catch the anterior longitudinal stria of the upper rectum, so as to close the space completely and to prevent the possibility of the sigmoid slipping in between the shelf and the rectum. A third shelf, the same distance higher up, created in the same way, usually brings one up to the level of the pelvic brim and thus Douglas' cul-de-sac is entirely obliterated.

The next step of the operation consists in suturing the round ligament to the anterior parietal peritoneum to within 1 to 2 inches of the uterine insertion. The remainder of the ligament on either side is employed for fixation sutures to the abdominal wall, in the manner described by Vineberg for retroversion. By means of these sutures the fundus of the uterus can be brought up as high above the pubis as one wishes, usually from 2 to 3 inches. When the operation is completed, the ovaries and tubes rest, naturally, on the posterior shelf, on a plane with the pelvic brim. The cecum, which in these cases is found dipping for some distance below the brim, is held up in its proper position without any sutures.

American Journal of Physiology, Boston

July, XXXIV, No. 4, pp. 353-451

8 Toxin of Rhizopus *Nigricans.* R. A. Gortner and A. F. Blakeslee, Boston.
9 *Experiments on Origin and Propagation of Impulse in Heart. W. J. Meek and J. A. E. Eyster, Madison.
10 Reactions of Earthworms to Hydroxyl Ions. A. T. Shohl, Boston.
11 Carbon Dioxid Production from Nerve Fiber in Hydrogen Atmosphere. S. Tashiro; Chicago, and *H. S.* Adams, Woods Hole.
12 Conditions Determining Rate of *Conduction* in Irritable Tissues and Especially in Nerve. R. S. Lillie, Worcester.
13 *Movements of Intestinal Villi. B. F. Hambleton, Nashville, Tenn.

9. **Origin and Propagation of Cardiac Impulse.**—With the aid of two string galvanometers, one comparing the upper with the lower part of the sinus node and the other comparing the sinus node with the auriculoventricular node, it has been shown that by means of vagal stimulation, cooling of the upper part of the sinus node or injection of potassium chlorid, the point of initial negativity may be made to shift from the upper to the lower part of the sinus node. This has been interpreted as showing that during these procedures the pacemaker of the dog's heart may move from the upper to the lower part of the sinus node. During the time that the seat of impulse formation resides in a lower part of the sinus node there is a lengthening of the cardiac cycle and a shortening of the *As-Vs* interval.

On the basis of work presented by Meek and Eyster and others of the series, a theory has been presented which correlates their experimental results on the automatic and vagal mechanisms of the vertebrate heart. It is believed that the specialized tissues of the heart exhibit from above downward progressively diminishing degrees of automaticity. Vagal chronotropic innervation of the specialized tissue also diminishes from above downward. The most automatic portion of the specialized tissue acts as pacemaker for the heart. The function of the chronotropic fibers is to depress this automaticity. When the automaticity of the pacemaker is reduced below that of a lower part the latter assumes dominance and becomes pacemaker. In this way the vagus, if the stimuli are properly graded, may cause the pacemaker to descend from the upper part of the sinus node in which it resides normally, to the lower part of the sinus node and finally even to the auriculoventricular node.

13. **Intestinal Villi.**—Hambleton claims that the villi possess distinct movements that are independent of peristalsis. These movements are two kinds: (1) a lashing movement, which may be supposed to aid in the mixing of the intestinal contents and thus promote the action of the digestive secretions as well as the process of absorption. This movement is not stopped by atropin. (2) An alternating retraction and extension, a form of movement which may be of special value in the act of absorption, particularly the absorption through the lacteals. This movement is abolished by both nicotin and atropin and is therefore under the control of the peripheral nervous mechanism. It is regarded by Hambleton as being probably a local reflex.

Boston Medical and Surgical Journal

July 23, CLXXI, No. 4, pp. 137-176

14 *Ulcerative Angina. Occasional Early Symptom in Typhoid. N. B. Potter, New York.
15 Problems of Private Sanatoria for Tuberculosis. F. M. Pottenger, Monrovia, Cal.
16 Development of Modern Artificial Pneumothorax. G. M. Balboni, Boston.
17 Pylorectomy for Ulcer. Report of Eight Cases. P. E. Truesdale, Fall River
18 Causes of Insanity. H. W. Wood, New Bedford.
19 Organotherapy. H. G. Jarvis, Hartford, Conn.

14. **Ulcerative Angina. Symptom in Typhoid.**—In enteric fever, Potter says, there appear not infrequently (6 to 12 per cent.) it may be before, but as a rule about the same time as the roseola, one or more small superficial ulcers, usually situated on the anterior pillars of the fauces, the so-called typhoid angina or Bouveret's ulcer. These ulcers may appear sufficiently early to be of some value in the clinical diagnosis of typhoid. An appreciation of this lesion will prevent the mistaken diagnosis of syphilis, diphtheria, croup and scarlet fever, as well as of other local lesions. Potter suggests that the ulcers are probably due to a secondary infection on a mucous membrane altered by the existing disease.

Bulletin of Medical and Chirurgical Faculty of Maryland, Baltimore

July, VII, No. 1, pp. 1-15

20 *Principles of* Medical Ethics. R. Winslow, Baltimore.
21 Gastric Ulcer, Its Treatment. W. L. Rodman, *Philadelphia.*

Canadian Medical Association Journal, Toronto

July, IV, No. 7, pp. 565-660

22 Method of Zadig in Practice of Medicine. T. McCrae, Philadelphia.
23 Treatment of Puerperal Infections. J. R. Goodall, Montreal.
24 Diagnosis of Subtentorial Tumors. Report of Four Cases. G. W. Howland, Toronto.
25 Nickel-Chromium Wire for Bacteriologic Laboratory. H. M. Lancaster, Toronto.
26 Chloroma. W. G. Hepburn, Montreal.

Colorado Medicine, Denver

July, XI, No. 7, pp. 243-282

27 More Common Drug Eruptions and Their Bearing on Diagnosis. G. P. Lingenfelter, Denver.
28 An Unusual Case. (Trophoneurosis). H. A. Black, Pueblo.
29 Histopathology of Faucial Tonsil. T. E. Carmody, Denver.
30 Methods of Invasion of Urinary Bladder. C. E. Tennant, Denver.
31 *Experiments on Animals to Determine Influence of Ureteral Obstruction on Kidney Infections. Description of Author's Nephropexy. O. S. Fowler, Denver.
32 Normal Kidney and Ureter, Shown by Roentgenoscopy. W. M. Spitzer, Denver.

31. **Ureteral Obstruction and Nephropexy.**—Fowler rotates the kidney to an oblique position so that the lower calyx has a downhill or gravity drainage when the patient is on his feet, which is an aid to the musculature of the urinary tract. Then he makes a permanent fixation in this position by taking two strips of fascia lata from the thigh, each ½ inch wide and 10 or 11 inches long, depending on the size of the kidney and the thickness of the muscles of the back. The strips of fascia soon become fixed and make it impossible for the kidney to get away and prolapse again.

Georgia Medical Association Journal, Augusta

July, IV, No. 3, pp. 71-105

33 Medical Gospel of Twentieth Century. W. B. Hardmann, Commerce.
34 Ethics. M. A. Clark, Macon.
35 Use of Protein Milk in Diarrheal Disorders of Infancy. W. A. Mulherin, Augusta.

Medical Record, New York

July 25, LXXXVI, No. 4, pp. 141-186

36 *Problems in Genetics. T. E. Satterthwaite, New York.
37 Chronic Intestinal Stasis. S. Wendkos, Philadelphia.
38 Parenteral Nutrition and Its Surgical Application. A. C. Burnham, New York.
39 Why Yellow Fever is Endemic in Tropical and Atlantic Region. G. D. Palacios, New York.
40 Interrelation of Ex-Intern and Hospital. L. Kerr, Brooklyn.
41 Metrorrhagia. E. Schwarz, New York.
42 Diagnosis of Chronic Bronchitis. J. M. Cruice, Philadelphia.
43 *Method of Treatment for Diphtheria Carriers. H. R. Miller, New York.
44 Pedal Tic. G. F. Boehme, Jr., New York.

36. Abstracted in THE JOURNAL, July 18, p. 270.

43. **Treatment of Diphtheria Carriers.**—The method devised by Miller consists in thoroughly spraying the throat with a solution varying in strength from ¼ to 1 per cent. of the usual 40 per cent. formaldehyd solution. The patient's throat is sprayed one hour before, or two hours at least after the ingestion of food or fluid. The spray is usually used every three or four hours except during sleep. The throats were sprayed daily and cultures taken from five to eight hours after the solution had been used. When the throat becomes free from bacilli, later confirmatory cultures were made. Because formaldehyd acts better on organic material when used warm or almost hot, the solution used in the last five cases was warmed in a corked bottle before use. It was freshly prepared daily. In general Miller advises that one begin with a solution of ¼ or ½ per cent. made up from 40 per cent. formaldehyd. When necessary the solution can be increased to 1 per cent, and be applied less frequently. Three, four, five or even six days of treatment may be required, but there should be persistence in the treatment. The urine should be examined daily so as to discover any effect on the kidneys. In none of the cases which Miller has treated has there been any evidence of any renal irritation. In the series of cases observed thus far no case failed to become diphtheria-free except one which was not treated under the author's supervision.

Michigan State Medical Society Journal, Grand Rapids

July, XIII, No. 7, pp. 417-457

45 Hour-Glass Stomach and Duodenum. G. B. Eusterman, Rochester, Minn.
46 Antigens in Wassermann Reaction. R. G. Owen and H. Snure, Detroit.
47 Frontal Neuralgia. J. V. White, Detroit.
48 Rôle of Pituitary Extract in Obstetrics. C. E. Boys, Kalamazoo.
49 Louis Pasteur. C. W. Hitchcock, Detroit.
50 Roentgen Therapy in Case of Mediastinal Tumor. J. G. Van Zwaluwenburg, Ann Arbor.
51 Pituitrin in Obstetrics. Analysis of Forty Cases. W. F. Seeley, Ann Arbor.
52 Case of Lymphangioma Circumscriptum. Case of Localized Sclerodermia. U. J. Wile, Ann Arbor.
53 Two Cases of Amebic Dysentery. H. B. Schmidt, Ann Arbor.

Modern Hospital, St. Louis

July, III, No. 1, pp. 1-58

54 Where Free Patients Will Fare Well. J. H. McClelland, San Francisco.
55 Value of Convalescent Labor in Hospital Work. C. F. Sanborn, Cincinnati.
56 Seattle Children's Orthopedic Hospital. A. B. L. Stedman, Seattle, Wash.
57 Surgical Operations and Surgical Dressings at Johns Hopkins Hospital. R. B. Seem, Baltimore.
58 United States Naval Hospitals in American Samoa. E. U. Reid, U. S. Navy.
59 Board, Staff and Special Departments of Small Hospital. E. A. Greener, Muskegon, Mich.
60 Items in Hospital Efficiency. J. A. Hornsby, Chicago.
61 Operating-Room Technic in Royal Victoria Hospital. R. K. Felter, Montreal.
62 Plans and Description of $400,000 Hospital. L. B. Simpson, Kansas City.
63 Advantages of State Control over Tuberculosis Hospitals. H. L. Taylor, St. Paul.

New York Medical Journal

July 25, C, No. 4, pp. 157-204

64 Primary Perineorrhaphy by Buried and Subsurface Catgut Suture. R. L. Dickinson, New York.
65 Roentgenoscopy of Appendix. J. T. Case, Battle Creek, Mich.
66 Tubal Gestation. J. A. McGlinn, Philadelphia.
67 *Significance of High Blood-Pressure. H. Brooks, New York.
68 Pott's Paralysis. Restoration by Albee's Operation. A. J. Davidson, Philadelphia.
69 Present Status of Cataract Extraction. L. W. Crigler, New York.
70 Quantitative Estimation of Uric Acid, Cholesterin and Sugar in Blood. R. Weiss, Freiburg, Germany.
71 Protection of Public by Law. C. E. Whitney, New York.
72 Is Constipation an Evil? W. F. Waugh, Post Falls, Idaho.

67. **High Blood-Pressure.**—Brooks summarizes his opinion of the significance of high blood-pressure by saying that it is not a cause but usually a result. It is not disease, though the evidence of it. It is not pathologic, but is usually, if not always, physiologic in meaning. It tends more to prolong life than to shorten it. Where its causes cannot be removed, it is not to be treated, but maintained.

Ohio State Meedical Journal, Columbus

July, X, No. 7, pp. 391-454

73 Liver in Its Relation to Operations on Biliary Tract and Stomach. G. W. Crile, Cleveland.
74 Serum Diagnosis of Cancer. O. Berghausen, Cincinnati.
75 What Shall We Do with Our Tuberculosis Patients? C. O. Probst, Columbus.
76 Bacterins in Treatment of Ear, Nose and Throat Affections. C. L. Minor, Springfield.
77 Dentigerous Cysts. A. L. Steinfield, Toledo.

Oklahoma State Medical Association Journal, Muskogee

July, VII, No. 2, pp. 45-78

78 Rabies in Oklahoma. G. Ellison, Norman.
79 Infantile Paralysis. L. E. Andrews, Oklahoma City.
80 Treatment of Infantile Paralysis. R. L. Hull, Oklahoma City.
81 Treatment, Care and Training of Feeble-Minded Children. W. L. Kendall, Oklahoma City.

Pennsylvania Medical Journal, Athens

July, XVII, No. 10, pp. 771-850

82 Exploratory Incision as an Aid to Diagnosis. R. R. Huggins, Pittsburgh.
83 *Craniotomy. G. M. Boyd, Philadelphia.
84 *Inflammations of Female Pelvis with Special Reference to Subject of Drainage. W. H. Howell, Altoona.
85 Routine Use of Tracheobronchoscope as Diagnostic and Therapeutic Measure. R. H. Skillern, Philadelphia.
86 Gangrene of Tonsils. Report of Case. C. C. Sandels, Pittsburgh.
87 Metastatic Choroiditis. Report of Case with *Streptococci* in Vitreous. E. Stieren, Pittsburgh.

88 Pyuria in Infancy. T. J. Elterich, Pittsburgh.
89 Treatment of Hemorrhoids with Electrolysis. C. C. Mechling, Pittsburgh.
90 Case of Fusiform Aneurysm of Descending Aorta, with Apparent Functional Recovery after Antisyphilitic Treatment. R. M. Goepp, Philadelphia.
91 *Hospital Economy in Relation to Rubber Gloves. S. E. Tracy, Philadelphia.
92 Conservative Treatment of Hip-Joint Disease. J. K. Young, *Philadelphia.*
93 Thoracic Surgery. A. Armstrong, White Haven.
94 Clinical History of Case of Cervical Polyp Complicated by Pregnancy. H. Stuckert, Philadelphia.

83. **Craniotomy.**—Boyd urges that craniotomy should be performed more frequently for the dead child because by so doing a long labor will be cut short and trauma and infection prevented. Craniotomy performed by a skilful operator should have no mortality. Cesarean section has so low a mortality that in suitable cases it should be performed more frequently.

84. Abstracted in The Journal, Oct. 25, 1913, p. 1565.

91. **Hospital Economy in Relation to Rubber Gloves.**—Dry gloves are pleasant to work with, but, asks Tracy, how long do they remain dry? Most surgeons wash them off before ey begin to operate. Gloves put up in a tight roll may may not be sterile. Granting, however, that the gloves are sterile when they come from the pressure sterilizer, many of them become infected by the time the surgeon is ready to operate. After the hands have been scrubbed and disinfected, it is necessary to dry them before the gloves can be *put on and this is done with a towel. While one end is being used on the hands, the other end is usually dangling* against the surgeon's clothes which have been in contact with the sides of the wash basin; sprinkled with the wash water; rubbed against other things in the operating room impossible of sterilization; brushed against various people in the room and probably against visitors in street clothes and thus contaminated in many ways. Before the hands have been thoroughly dried they have been rubbed over by the infected end of the towel. Then the gloves are picked up and handled, the fingers in many instances are rubbed down by the infected hands and the gloves become infected before the operation is started.

This source of infection is eliminated by those who use wet gloves. After the hands have been scrubbed and disinfected, the gloves are filled with an antiseptic solution and slipped on. Any rubbing down on the fingers, which may be necessary, should be done with a piece of sterile gauze and in this way the gloves are handled but little. If dry gloves are injured during the operation, the powder within is smeared over the field of operation, and the wound not only gets the germs from the pores of the skin but also the germs which were rubbed on the hands from the infected towel. Not infrequently the whole end, or side of a finger will give way, and the surgeon may thus work several minutes with a finger or fingers exposed before the condition of the glove is recognized. Such a mishap is serious if the hands have not been thoroughly scrubbed and disinfected. With boiled gloves, this accident practically never happens. If the wet gloves are perforated, or torn, during the operation, any skin germs which may leak through, have been in contact with an antiseptic solution and are less likely to cause infection. After the wet gloves have been put on, if the surgeon will pull out the gauntlets and open and close the hands a few times, the excess of fluid will be expelled. It is a very simple matter to fill a sterilized jar with an antiseptic solution in which to store boiled gloves for emergency work, and gloves thus treated can be used many times. If they are to be used on dirty hands, the ones from the antiseptic solution are decidedly less likely to become infected.

Philippine Journal of Science, Manila

April, IX, No. 2, pp. 137-195

95 Sanitary Survey of San Jo[illegible] Estate and Adjacent Properties on Mindoro Island, with Reference to Epidemiology of Malaria. W. E. Musgrave and Others, Manila.

Public Health Journal, Toronto

July, V, No. 7, pp. 439-512

96 Tuberculosis and Its Control. C. S. Mahood, Calgary.
97 Practical Application of Wassermann Test in Public Health Work. J. H. Laidlow, Ottawa.
98 How Toronto Controls Her Milk Supply. H. Lloyd, Toronto.
99 Interrelation of Physician, Citizen and State to Public Health. J. W. McIntosh, Vancouver.
100 Dawn of To-Morrow. C. G. Sutherland, Moose Jaw.
101 Alcohol, Its Place and Power. J. Grant, Ottawa.
102 Rare Piece of Humanity. S. W. Cody, Sweaburg.
103 Chronicles En Route. Back in Japan. F. Withrow.

Surgery, Gynecology and Obstetrics, Chicago

July, XIX, No. 1, pp. 1-130

104 *Interpleural Pneumolysia. F. Torek, New York.
105 *Function of Periosteum. J. E. Moore and J. F. Corbett, Minneapolis.
106 *Experimental Study of Silk-Tendon Plastics with Particular Reference to Prevention of Postoperative Adhesions. C. W. Henze, New Haven, Conn., and L. Mayer, New York.
107 *Pathology and Treatment of Chronic Leukorrhea. A. H. Curtis, Chicago.
108 Intestinal Polyposis with Report of Case with Three Intussusceptions. J. Bratrud, Warren, Minn.
109 Pyonephrosis. C. H. Chetwood, New York.
110 *Hemorrhagic Osteomyelitis. G. Barrie, New York.
111 Prevention and Treatment of Pelvic Adhesions. P. Strassmann, Berlin.
112 Case of Arteriovenous (Varicose) Aneurysm of Deep Epigastric Artery and Vein. M. J. Seifert, Chicago.
113 Tarsalgia. W. J. Merrill, Philadelphia.
114 *Discussion of Pott's Fracture with Complications. K. Spe[illegible], Chicago.
115 Placenta Prævia and Its Treatment. W. Nagel, Berlin.
116 Operative Technic for Radical Extirpation of Vesical Neoplasms en Masse. J. B. Squier and C. G. Heyd, New York.
117 Surgery of Ileocecal Coil. F. Reder, St. Louis.
118 Evolution of Tonsil and Adenoid Operation and Description of Writer's Method of Procedure. J. C. Beck, Chicago.
119 *Use of Wire Tourniquet in Operations for Goiter. L. Freeman, Denver.
120 Two-Time Treatment of Encysted Peritoneal Abscesses. W. A. Bryan, Nashville, Tenn.
121 Autogenous Fascial Transplantation. Report of Three Cases. V. F. Marshall, Appleton, Wis.
122 Universal Extension Apparatus Applied to Surgical Bed. C. G. Swenson, Chicago.
123 Modification of Abbott's Frame for Applying Scoliosis Jackets. A. H. Freiberg, Cincinnati.
124 Sliding Splint of Plaster of Paris for Fractured Femur. J. T. Hanan, Montclair, N. J.
125 Dilatation of an Otherwise Impassable Stricture by Retrograde Passage of Filiform Guide. A. J. Underhill, Baltimore.

104. **Interpleural Pneumolysia.**—The method of operating advocated by Torek is as follows: Anesthesia is conducted by intratracheal insufflation or other methods of differential pressure to guard against the possible occurrence of respiratory accidents. An incision of ample dimension, about 6 inches, is made in the sixth or seventh intercostal space, at the posterolateral aspect of the chest, down to the pleura, and after all hemorrhage has been stopped the *pleura* is opened. The patient is now placed with the head low, so that if in the course of the manipulation of the lung the contents of a cavity are expressed, they may run into the mouth and not into the opposite lung. The adhesions between the two layers of pleura are then separated. This is accomplished by introducing at first only the tip of a finger to separate the adhesions in the immediate vicinity of the incision, the ribs being held apart by retractors. The separation then proceeds further and further, until finally the whole hand is introduced into the chest in order to liberate the more distant parts of the lung. In the course of this procedure bands of adhesions may be encountered that are so dense as to require division with the aid of scissors. When the separation of adhesions has been completed, the lung will collapse as much as the degree of its infiltration will permit; it is allowed to remain in this state of collapse and is not inflated before closing the thorax. The pleural cavity is closed without drainage. The two ribs which had been spread apart are brought in apposition by pericostal sutures of silk or chromicized catgut, the muscles are sutured with catgut, and the skin with silkworm-gut. Subsequent treatment is similar to that given in the ordinary pneumothorax method.

105. **Function of Periosteum.**—Moore and Corbett found that cutting the nutrient artery prevents the formation of subperiosteal bridge. As the nutrient artery supplies medullary bone, and as the periosteum is left intact when the artery is cut, they assume that the medullary bone is responsible for the subperiosteal bridge. Subperiosteal bridge may fill in gaps left in the periosteum, therefore is not absolutely dependent on that structure even as a place of refuge. Subperiosteal bridge is more marked in cases in which it receives osteoblasts from two sources than from one. Fascia is a substitute for periosteum. In heterotopic transplants, no subperiosteal bone could be produced by irritation. The authors state that the present day surgeon may be comparatively indifferent to the periosteum when operating on bone. If it is convenient he preserves it, because the conservation of tissues is always good surgery; but if it is not convenient he does not hesitate to sacrifice it, knowing that it is not an essential element in the healing of bone.

106. **Silk-Tendon Plastics.**—The experimental study of the Lange silk-tendon plastic by Heenze and Mayer indicates that the one effective method of preventing postoperative adhesions consists in a restoration of the normal anatomic relations of the transplanted tendon to its environment. This is best done by Biesalski's method of running the transplanted tendon through the sheath of the paralyzed tendon. All artificial methods of preventing adhesions by implanting living tissues or interposing foreign bodies defeat their own ends, since they exaggerate rather than inhibit the tendency to adhesions. The one possible exception is Cargile membrane. This may, for five or six weeks, help slightly to prevent dense adhesions, but the results of the author's experiments do not warrant maintaining this effect to be more than a possibility. The adhesions after the Lange operation occur not to the silk but to the end of the transplanted muscle or tendon.

The tendon itself, subsequent to the operation, shows extensive necrosis, from which, however, it recovers in from five to six weeks. During this period it should be kept at rest, and undue strain or tension on the silk strands should be avoided. The tissue enveloping the silk strand consists of a dense fibrous tissue, almost all of whose fibers and cells run parallel to the long axis of the silk; a smaller number encircle the silk. It is developed essentially from the adjacent connective tissue, though the true tendon-cells and the cells of the peritendineum and tendon-sheath also contribute to its formation. The arrangement of its fibers and the degree of its development depend on the functional demands to which it is subjected. Anatomically, it is not tendon. It must be emphasized that its development, though rapid during the first few weeks, is subsequently slow. The major share of the tension must for a long time be borne by the silk strands. Therefore, they must be of sufficient tensile strength. Therefore there is also necessity of long postoperative fixation, allowing the tendon to recover from the necrosis subsequent to the operation and insuring a firm union between the silk strands and the stump of the transplanted tendon.

107. **Pathology and Treatment of Chronic Leukorrhea.**—Curtis urges that care of the general health, free elimination, and treatment of pelvic complications which predispose to mild local infection must not be overlooked in the care of chronic leukorrhea. Curtis' bacteriologic examinations indicate that treatment of the endometrium can ordinarily be dispensed with. In unusual cases dilatation for drainage, possibly aided by topical applications, is logical treatment. Curettement of the uterine cavity, douches and tampons are probably harmful. Glands of the cervix which produce excessive mucous secretion should be excised, destroyed by cautery or otherwise rendered inactive. Purulent discharges originate, as a rule, in the lower genital tract.

Bacteria of low pathogenicity, chiefly anaerobes, evidently play an active part in their production. Autogenous vaccines decrease general malaise and backache. When aided by correction of associated pathology their influence on chronic purulent discharges is beneficial; a large number of patients are helped only so long as vaccines continue to be administered; a smaller number are permanently improved, and a fair percentage appear to be cured.

Powder treatment exerts a favorable influence but in Curtis' experience has a limited value only. Yeast seems not to have distinct advantages over other forms of powder treatment. The medicinal effects of ingredients of the powder are probably secondary to benefits from its absorptive action. Irritating discharges are absorbed by the powder, whereby the tissues are given opportunity to regain their normal resistance. If the tissues are incapable of return to normal while kept dry through use of powder, recurrence of discharge may be expected with discontinuance of treatment. Specific treatment that produces the highest percentage of successful results consists in the continued use of autogenous vaccines and dry cleansing of the vagina, together with applications of powder. Local treatments with iodin or other drugs are possible sources of help.

110. **Hemorrhagic Osteomyelitis.**—Barrie believes that the so-called medullary giant-cell sarcoma of bone is in fact a localized regenerative inflammatory lesion, without evidence of malignancy. Owing to the anatomic arrangement and structures involved, slight initial trauma is ample to account for the pathologic phenomena and progressive bone destruction that occurs, regardless of any infective process. The giant-cells found in these lesions are neither tumor-cells nor tissue builders. They act in the capacity of scavengers. A more simple terminology and classification is needed. The terms at present in use are numerous, confusing and misleading. The following classification is suggested: Hemorrhagic osteomyelitis. Traumatic. Localized. Non-infective (?). Non-suppurative. Acute. Never observed. Chronic—Type A, hemorrhagic (shows little or no metaplastic change). Type B, fibrocystic (due to later metaplasia). A. Chronic hemorrhagic osteomyelitis—Synonyms: (1) medullary giant-cell sarcoma; (2) myelogenous giant-cell sarcoma; (3) myeloma; (4) medullary giant-cell tumor (Bloodgood). B. Chronic fibrocystic osteomyelitis—Synonyms: (1) benign bone cyst; (2) osteitis fibrosa; (3) chronic osteomyelitis fibrosa—cystic or solid (Bloodgood); (4) traumatic solitary bone cysts (Felten and Stolzenberg).

114. **Pott's Fracture.**—Speed analyzed 208 cases of ankle fracture and found that Pott's fracture as classically understood is very rare. He says that each ankle fracture should be treated in accordance with the most searching diagnosis, aided if possible by skiagrams, and not by routine method. Too much faith should not be given to anteroposterior skiagrams through the ankle mortise. Lateral views should be made to show the correct position of the astragalus in the anteroposterior axis and to reveal lipping fractures. Speed would lay more emphasis on the treatment of fracture of the external malleolus with or without ligamentous damage on the inner side of the ankle by overcorrection in extreme inversion on a splint or in a cast. He advises that special attention should be paid to cases with posterior or anterior displacement of the foot, as these indicate lipping fractures of the tibia or complete separation of the external malleolus with loss of support of either anterior or posterior tibiofibular ligaments. Operation should be considered in these cases, particularly to obtain the best result. Operative measures, of simple replacement, nailing or other procedures, give perfect anatomic results in selected cases. Speed insists that the use of the foot should not be permitted until pain is not caused.

119. **Wire Tourniquet in Operations for Goiter.**—In the operation devised by Freeman the gland is dislocated in the usual manner through a collar incision. Several loops of heavy braided silk or, better, strong fishing line are then drawn through the substances of the lobe near its attachment. This may conveniently be done by plunging a small pair of blunt-pointed "alligator forceps" through the gland, grasping at its center a ligature a foot long and dragging the loop into position. Several loops are required—one near

gm. of morphin being readily detected, but in looking for very small amounts it is necessary to add a few drops of potassium cyanid solution at the end of the reaction to remove any blue color formed from the copper which otherwise would mask the tint. The addition of the solution of potassium cyanid before that of the copper tends to prevent the reaction occurring.

The reaction is also a very delicate one for copper 0.00001 gm. being easily detected in solution; moreover, it will occur with any of the cuprous or cupric salts, and even the insoluble copper oxalate is markedly active. The reaction appears to be dependent on the combination of all four reagents; the copper acting as a catalyst. It will occur, however, on the substitution of monomethylamin (NH_2CH_3) for ammonia, but not with dimethylamin [$NH(CH_3)_2$], nor with caustic soda, the NH_2 group being apparently essential to the reaction.

Methyl and ethyl morphin (codein and dionin), drugs hitherto indistinguishable from morphin by ordinary tests, do not give the reaction. Apomorphin $+ NH_4OH + H_2O_2$ gives a slight pink color which, on the addition of copper, turns orange. The reaction has been tried on the following alkaloids with negative results: Strychnin, brucin, atropin, narcotin, heroin, cocain, nictoin, cephalin, emetine, veratin, hysostigmin, pilocarpin and conium. Other substances were ed as substitutes for copper, viz., powdered aluminum, iron, ckel and calcium, the salts of manganese, cobalt and iron, and colloidal selenium and rhodium. In all cases, however, the results were negative. The red substances formed is insoluble in the ordinary morphia solvents and also in ether, chloroform and toluol, and the whole of the morphia is apparently changed, none of the alkaloid being precipitated from the ammoniacal solution.

Annales de Gynécologie et d'Obstétrique, Paris

June, XLI, No. 6, pp. 321-383

27 *Morphin in Puerperal Eclampsia. J. Rouvier.
28 *Pregnancy after Myomectomy; Five Cases. Goullioud.
29 The Ovary with Fibromas. (L'ovaire chez les fibromateuses.) De Jong. Commenced in No. 5.

27. **Eclampsia.**—Rouvier says that eclampsia is frequent and severe in his district, and that the secret of success in treatment is to detect the first onset of the eclampsia and by prompt measures to check it in its incipient stage, avoiding especially any errors in diet, as this is particularly liable to bring on the convulsions. It is safer, he says, to keep the patient on water alone, and then on an unsalted vegetable diet. By this means the eclampsia may be aborted even when there is already high albuminuria and high arterial pressure. He cites the details of six cases in which the patients disregarded his warning as to the diet and returned to the usual cold meats, candy and pastry, followed in a few hours by the first convulsions. In a corresponding group of six typical cases the women heeded his advice, and, although there had been up to three weeks of symptoms suggesting impending eclampsia, on the unsalted vegetable diet the blood-pressure dropped and the threatening storm blew over. Restriction to milk does not answer the purpose.

Some of the symptoms of eclampsia resemble those induced by injection of epinephrin and the action on the adrenals of some toxin may be one of the elements in the clinical picture. They may be stimulated by the toxin to overproduction or it may paralyze them more or less and also other organs. The convulsion itself does sudden and serious harm from the passive congestion in various organs during the tonic contractions, and the patient may die of asphyxia during the convulsion or may die from the disorganization that follows in its wake. For these reasons Rouvier keeps the patient under the influence of morphin when the convulsions are once installed and does not hesitate to inject large doses to arrest the convulsions: 2 c.c. at once, followed in half an hour by 1 c.c. and in another half hour by 1 c.c., thus giving 4 c.c. in the first hour. If the convulsions subside for two hours he gives an additional 0.5 c.c. two hours later; if the convulsions keep up, he continues with 0.5 c.c. every hour. The azotemic forms with myosis seem to require larger doses than others. He has records of twenty-nine cases of eclampsia thus treated: he gave up to 11 c.c. in forty-six hours in one case, and 14.5 c.c. in thirty hours in another. Reexamination later has confirmed the harmlessness of this method. The morphin reduces the congestion in the kidneys and this helps to wash out the toxins and the albuminuria subsides. Adjuvant measures are lavage of the stomach and intestine and, with pulmonary edema, dry cups to the chest and venesection plus continuous intake of oxygen by inhalation and subcutaneous injection.

28. **Pregnancy after Myomectomy.**—Among the 74 women with uterine myoma treated by myomectomy one or more pregnancies occurred later in 5 of the 26 married women under 40, that is, in 20 per cent. All the patients have been under observation for long periods after the myomectomy. Recurrence is rare and there was usually an interval of ten or more years permitting the raising of a family.

Archives des Mal. de l'App. Digestif, Paris

June, VIII, No. 6, pp. 301-360

30 *Splashing Sound and False Ascites as Signs of Ileus. (Valeur séméiologique du clapotage abdominal et de la fausse ascite pour le diagnostic de l'occlusion intestinale.) A. Mathieu.
31 Indications for Operative Treatment of Constipation. (Les altérations du colon droit et constipation caecale.) P. Duval and J. C. Roux.
32 Gastric Crises plus Herpes Zoster. Hautefeuille and Dupret.

30. **Splashing Sound as Sign of Ileus.**—Mathieu remarks that sufficient emphasis is not placed on the instructive findings of a splashing sound and pseudo-ascites just above the point in which the intestines have become obstructed from any cause. He has noticed this in a pronounced form in twelve recent cases of ileus, the obstruction developing slowly with paroxysmal exacerbations. It is sometimes hard to decide whether the trouble is from ileus or from dilatation of the stomach with pyloric stenosis; the area of dulness and roentgenoscopy will aid in differentiation.

Archives des Maladies du Cœur, etc., Paris

July, VII, No. 7, pp. 433-496

33 Anemia in Rachitic Twins. (Variété d'anémie profonde et durable, observée chez deux jumeaux rachitiques hypotrophiques.) E. Lenoble.
34 Arhythmia Originating in the Sinus with Abnormally High Blood-Pressure. (Présence d'une arythmie sinusale chez quelques hypertendus.) *D. Danielopolu and J. Heitz.*
35 Vasoconstricting Properties of Extravasated Blood. G. N. Stewart and T. F. Zucker (Cleveland).

Archives de Médecine des Enfants, Paris

June, XVII, No. 6, pp. 401-480

36 **Congenital Lesions of the Liver in the New-Born* and in Athrepsia. H. Barbier and M. Cleret.
37 Vaccine Therapy of Vulvovaginitis in Children. J. Comby and Condat.
38 Acute Influenzal Thyroiditis in Girl of 13 with Pott's Disease. Phelip and Trèves.
39 Streptococcus Peritonitis in Small Children. H. Schwers.
40 **Acute Enteritis and Hemiplegia in Two Infants. Carretier.*
41 Pneumonia Simulating Membranous Croup. J. Comby.

36. **Congenital Lesions in the Liver.**—Barbier and Cleret report the details of eleven cases in which the liver of infants dying from athrepsia showed congenital changes enough to explain the downward trend of the children, but in these cases other organs are liable to be physically inferior likewise. The liver being at birth below par is especially sensitive, but if it is spared any extra task, it may recuperate and the child may finally grow into health if it can be tided along through the first few months. The diet should be chosen with a view to spare the liver in particular. To know how to wait, in these cases, is the beginning of wisdom.

40. **Acute Enteritis and Hemiplegia.**—Carretier reports gastro-intestinal disturbances and hemiplegia in two artificially fed infants 20 months old. They developed symptoms

of meningism and hemiplegia which subsided by the third or fourth month during which the children lived on slightly sweetened tea and whey, alternating with a vegetable broth.

Lyon Médical

July 5, XLVI, No. 27, pp. 1-56

42 Diseases of the Hands in the Rose-Gatherers of the Riviera. Revillet.

Presse Médicale, Paris

July 1, XXII, No. 52, pp. 497-504

43 Intratracheal Insufflation. T. Tuffier and G. Loewy.

July 4, No. 53, pp. 505-516

44 Technic for Operative Treatment of Abscess in the Breast. (Incision sous-et rétro-mammaire.) E. Desmarest.
45 Measurement of Pressure in Cerebrospinal Fluid. (Sous-arachnoidomanométrie.) S. Chauvet.

July 8, No. 54, pp. 517-524

46 *Pituitary Body not Responsible for Diabetes Insipidus. (Régulation de la teneur en eau de l'organisme.) J. Camus and G. Roussy.

46. **Diabetes Insipidus and the Hypophysis.**—Camus and Roussy report extensive experiments on dogs and other animals the results of which seem to show that the hypophysis is not responsible for diabetes insipidus. The seat of the mechanism regulating the water content of the organism seems to be in the region just back of the hypophysis. Injury to this region, leaving the hypophysis intact, brought on polyuria, with or without polydipsia, in all of their experiments. The experiments on record and clinical experiences apparently demonstrating the connection between disorders of the pituitary body and diabetes insipidus, they think have been misinterpreted; the inevitable concomitant superficial injury of the region just to the rear was probably the real cause of the diabetes. At least this is true of dogs, they assert; the regulating center is in the gray matter of the third ventricle, not in the pituitary body.

Berliner klinische Wochenschrift

July 6, LI, No. 27, pp. 1253-1300

47 *Pyelography and Its Importance for Surgical Work; Indications and Limitations. E. Joseph and L. Casper.
48 *Roentgen Rays and Pregnancy. H. Edelberg.
49 Histologic Variations in Chicken Sarcomas Induced by Filtrable Agents. P. Rous (New York).
50 Nothing Takes the Place of the Knife in Treatment of Cancer. (Zur Zeller'schen Pastenbehandlung.) *Lange.*
51 Simple Portable Device to Estimate Carbon Dioxid Tension of Expired Air. (Zur Bestimmung der Kohlensäurespannung in der Lungenluft.) L. S. Fridericia.
52 *Hysteroneurasthenia, Chronic Appendicitis or Helminthiasis? A. Rheindorf. Commenced in No. 26.

47. **Pyelography.**—Thirty-eight roentgenograms accompany this study of pyelography by Joseph, based on 100 cases. He has never had it cause colic pain except in three cases and in two it was mild and transient. In the third the pain persisted for three hours. He says that the procedure is scarcely more than a rinsing out of the kidney pelvis with collargol solution, but if the ureter is found unduly sensitive when the catheter is introduced, it is better to refrain from the method altogether. He advises a fine catheter permitting the surplus fluid to flow back outside of it.

Casper advises not to use a syringe but merely a tube and small funnel, as for lavage of the stomach. Even with the most scrupulous care, mishaps are liable, he says; he recently witnessed pains, nausea, vomiting and fever to 39.2 C. follow pyelography done with every imaginable caution, so that he warns against the use of the method when other means are instructive. Wandering kidney can be diagnosed by other means as a rule and pyelography can generally be dispensed with. It is directly contra-indicated as liable to do harm in tuberculosis of the kidney, and the findings are liable to be misleading with calculi. In *five* of seven cases of hypernephroma, pyelography gave negative findings, so that it was of *no* aid in the diagnosis. With an abnormally located kidney an opaque catheter gives just as instructive findings as injection of an opaque fluid while it is far less dangerous. A simple method of testing for impairment of function by a tumor is to test the functional capacity of each kidney separately (freezing-point, phlorizin injection and U) and compare the findings. A tumor in one is liable to reduce its functional capacity. If this fails to locate a tumor, percussion after inflation of the colon will often succeed. Pyelography on the other hand may be indispensable for the diagnosis of horse-shoe kidney and hydronephrosis, in which it clears up the clinical picture at once.

48. **Roentgen Exposure of the Ovary with Pregnancy Later.**—Edelberg reports a case of myoma of the uterus in a woman of 38, six years after her second pregnancy. She was given a course of Roentgen treatment, the ovaries being systematically exposed for a total of 125 minutes during three months, the total dosage 146 Kienböck X units, and at least 35 of the units must have been given after the unsuspected pregnancy was under way, but the pregnancy proceeded unmolested to normal term and the child seems absolutely normal and thriving to date (seventh week).

52. **Chronic Appendicitis and the Oxyuris.**—Rheindorf has found specimens of oxyuris in the apparently sound appendix and he ascribes many of the symptoms and disturbances of supposed chronic appendicitis to the presence of these helminths. In several cases they were found only when numerous sections of the appendix were examined. In one case only one oxyuris was found in a block of 100 sections. If he had commenced cutting at the other end of the block he probably would have missed it. The patient was a girl of 17 who for two years had had attacks of pain in the cecum region lasting sometimes for a day or so. She had no itching at the anus but twenty specimens of the oxyuris were found in the lumen of the appendix.

The oxuris is transparent and difficult to detect unless it is white from being full of eggs. In the case of a man teacher of 32, the appendix contained a large number of specimens and the pains kept up after removal of the appendix until the helminthiasis was cured by a vermifuge. It is probable that helminths are responsible in some cases for the persistence of pains after appendicectomy. Rheindorf has carefully examined eighty-two cases of the kind, the findings suggesting that the mere presence of the helminths sets up spastic contracture in some cases or the helminths may have a *direct irritating* action on the nerve terminals; in some of his sections the oxyuris was close to some of the larger nerve sections. The pains are described as dragging, boring, cutting, stabbing, prickling or a sensation of pressure, usually aggravated by movements and sometimes accompanied by nausea and vomiting. Sometimes the pain waked the patient in the night. Two brothers were operated on for chronic appendicitis and the oxyuris was found in the appendix of both. In one there were signs of inflammation and this boy had had fever the night before the operation. He found the oxyuris in 27 boys and in 13 girls with symptoms of chronic appendicitis. In adults he can count on the oxyuris in 20 or 30 per cent. of all cases and in 50 per cent. in children. That others do not find them more frequently is probably because they are overlooked. Bäärnhielm found them in 9 per cent. of the 875 cases examined in Sweden, and Sagredo in 41 per cent. at Geneva.

Deutsche medizinische Wochenschrift, Berlin

July 8, XL, No. 28, pp. 1409-1456

53 *Pulmonary Embolism Prevented by Reducing Coagulating Power of Blood. (Bau der in die Pulmonalarterie embolisierten Thromben.) H. Ribbert.
54 Dialysis Serodiagnosis. (Zur Anwendbarkeit des Abderhaldenschen Dialysierverfahrens.) E. Mosbacher and F. Port.
55 Protective Ferments against Plant Albumin. (Spezifizität der gegen Pflanzeneiweiss gerichteten proteolytischen Fermente.) B. Issatschenko.
56 *Acute Hemolytic *Malaria.* (Schwarzwasserfieber.) A. Plehn.
57 *Blocking the Nerves for Gynecologic Operations, etc. (Die paravertebrale Leitungsanästhesie.) P. W. Siegel.
58 Friedmann's Treatment for Tuberculosis. (Schlechte Erfahrungen bei chirurgischer Tuberkulose mit dem Friedmannschen Mittel.) E. Kahn and O. Seemann. (Erfahrungen mit dem Friedmannschen Heilmittel bei chirurgischer Tuberkulose.) R. Drachter.

59 Perforation of Tubercle into Aorta and Into Trachea. A. Girardet.
60 *Early Diagnosis of Gastric Cancer. (Zur Differentialdiagnose der Achylien mit bes. Berücksichtigung der quantitativen Eiweissbestimmung und der Fermentabscheidungen im Mageninhalt.) M. Trallero.
61 Telecardiography. (Einfache Methode, die Herzspitze für die Messung des Längsdurchmessers des Herzens sichtbar zu machen.) Huismans.
62 *Transmission of Friedmann's Virus from Guinea-Pig to Guinea-Pig with Outbreak of Tuberculosis. (Zur Virulenz des Friedmannschen Tuberkulosemittels.) K. Kaufmann.

53. Structure of Thrombus in Pulmonary Embolism.—Ribbert concludes from the structure of the long, loose and easily swept away thrombus which is found in the cases of fatal pulmonary embolism that changes in the composition of the blood are responsible for the development of thrombi of this special character. They must be regarded as a product of coagulation. If this view is accepted, then the next step is to reduce the coagulating property of the blood as the important factor in warding off pulmonary embolism. This form of thrombus production is certainly under our control by means to check the coagulation of fibrin.

56. Hemolytic Malaria.—Plehn insists that in severe cases of black-water fever, as in the case he describes, the physicia us have the courage of his convictions and, aside from patient in bed, do nothing. During the critical tient must keep absolutely still, as this alone e remaining red corpuscles to supply the tissues with oxygen. If there is difficulty in breathing, usea, he does not hesitate to give morphin. Above all the patient must not be moved under any circumstances, and there must be no violent purging nor stimulation by baths. The unfavorable influence of chilling was particularly noticeable in the case reported. The rapid, small and sometimes empty pulse must not be mistaken for "heart weakness"; heart stimulants should be scrupulously avoided as they merely exhaust the overworked heart. At the utmost, only saline or Ringer's fluid can be permitted in intravenous injection, and he has always shrunk from this, fearing to dilute the already cell-poor blood any farther. Forced feeding had better be avoided likewise as liable to cause nausea and vomiting.

Not until the destruction of reds has ceased and the patient begun to recuperate should he be taken where he can get institutional care if need be. Under good care and nourishing food recuperation proceeds very rapidly. The attack in the case reported occurred in a Berlin hotel after return from Africa and no attempt was made to take the young man to the hospital until he had begun to improve. Then convalescence proceeded rapidly. The hemolysis occurred with intermissions several times a day, the close of each accompanied by chills and new rises of temperature, with vomiting at times but there was no tendency to anuria. The destruction of the reds proceeds inexorably so that death generally occurs the fourth or fifth day. The case he reports is one of the few cases of this type with recovery. The predominant other types are the fulminant toxic form, the hemorrhagic and the abortive hemoglobinuria forms. The clinical picture may be complicated in either type by nephritis or obstruction of the bile passages. The latter occurred in three cases in his experience but at necropsy no obstacle to the flow of bile could be discovered.

57. Blocking the Nerves for Laparotomies, Etc.—Siegel
tion by the method of paravertebral and parasacral
describes he succeeded in 70 per cent. of 170
stetric or other abdominal operations without
nesthesia. Even in the cases requiring
ion anesthesia, the amount of the
The local anesthetic in a dilute
—and the combination of the paraver-
techand plus the twilight sleep are the
the convulsichod. One patient died the
c.c. and in at a hysterectomy; the other
in the first ho under close control there
ours he gives an 1 84; the pulse was constantly under 100 in 106; vomiting occurred in 5 cases; headache in 7; coughing in 15, and without cause in the lungs in 13, and 23 complained of backache; pneumonia occurred in one of the 70 laparotomy cases.

60. Early Diagnosis of Gastric Cancer.—Trallero gives a number of tables showing the findings with malignant disease in the stomach, nervous achylia and other affections in respect to the digestive ferments, acidity, etc. The findings show that even large albumin content and subnormal hydrochloric acid can not be accepted as sure signs of cancer. The assumption of cancer is sustained however by finding an unusually high albumin content with unusually low pepsin and rennin content, when the production of gastric juice as a whole is materially reduced. Differentiation between nervous achylia and that due to gastritis is facilitated by the striking lack of constancy in the secretion of the ferments. The rennin and pepsin may be found in normal range at one time and then very much reduced or lacking altogether. This fluctuation was never noticed in the cases with an organic basis. The findings recorded in the tables are the more instructive as they are compared with those from fifty normal persons.

62. Transmission of Tuberculosis from Guinea-Pig to Guinea-Pig after Injection of Friedmann's Remedy for Tuberculosis.—Kaufmann reports that he inoculated a guinea-pig last February with the contents of an ampule of Friedmann's remedy. The animal died the twentieth day with signs of microscopically certain tuberculosis. Another guinea-pig was inoculated with an emulsion of the spleen from the first animal, and when killed the thirty-sixth day severe tuberculous processes were found in the peritoneum, liver, spleen, lung and glands. Three other guinea-pigs also inoculated at the same time died of severe tuberculosis. These findings confirm that the Friedmann virus is transmissible to warm-blooded animals and that under certain circumstances it may become extremely pathogenic.

Jahrbuch für Kinderheilkunde, Berlin

June, LXXIX, No. 6, pp. 645-762

63 The Effect of Whey on the Epithelium, etc., of the Intestines. I-V. (Einfluss der Molke auf das Darmepithel.) E. Moro. (Artspezifität der Molkenwirkung auf Darmzellen.) H. Hahn, Hayashi, L. Klocman, E. Freudenberg and G. Schofman.
64 Spasmophilia. E. Freudenberg and L. Klocman.
65 The Blood in Melena Neonatorum. E. Lövegren.

Medizinische Klinik, Berlin

July 12, X, No. 28, pp. 1171-1212

66 *Uterine Hemorrhage in Girls. G. Schickele.
67 *Deforming Juvenile Osteochondritis. Brandes.
68 *Diagnostic Importance of Tuberculin Reaction in Focus in Obscure Hip-Joint Disease. (Tuberkulinherdreaktion bei unklaren Hüftgelenkserkrankungen.) W. Keppler and F. Erkes.
69 Adipositas Dolorosa. (Fall Dercumscher Krankheit.) L. R. v. Korczynski.
70 *Excessive Vascular Tonus and Contracted Kidney. (Zur Lehre von der vasculären Hypertonie.) E. Münzer and A. Selig.
71 Climate of German Seashore Resorts. (Ost- und Nordseeklima.) Ide.
72 Physical and Chemical Therapeutic Measures and the Distribution of the Blood. C. Hertzell.

66. Causal Treatment of Uterine Hemorrhage in Girls.—Schickele remarks that nearly all cases of abnormal uterine hemorrhage in the young can be traced to some constitutional or general affection, inadequate or excessive nourishment, or primary or secondary irritability of the vasomotor system, or to some local cause, disturbance in functioning of the ovaries or other glands, inability of the normal or defectively developed uterus to contract properly, or the vasomotor apparatus of the uterus may be unduly irritable, or there may be secondary hyperemia in the uterus, or some upset in the local metabolism, that is, in the production of the substances in the uterus which dilate the blood-vessels and check coagulation. These substances may be produced to excess at the onset of puberty and possibly keep the uterus irritated and thus maintain the hemorrhages.

Treatment of excessive hemorrhage in girls should be based on which of the above factors are operative. With defective secretion in the ovaries or other glands, a change of climate or of occupation may aid in restoring normal conditions; others improve under a diet rich in salts, with large doses of sodium bicarbonate. With a defectively developed uterus, ergot may improve its contracting power and ovarian therapy may start the uterus to grow. When the uterus is normal but seems unable to contract properly, hypophysis extract with or without ergot may prove useful, as also with simple hypoplasia. When vasomotor causes are responsible, a vegetable diet, calcium salts, hydrotherapy and possibly psychotherapy render good service. When general or constitutional causes are at work, appropriate treatment should be applied, but local measures should be avoided to the utmost. If more vigorous measures are unavoidable, the uterus may be tamponed or the curet may be required in very exceptional cases.

67. **Deforming Osteochondritis in the Young.**—Brandes encountered last year ten children presenting the clinical picture of a hip-joint trouble permitting the patient to flex the hip-joint freely while abduction is almost impossible. The roentgenoscopic findings at first are insignificant but later they are more serious than would be suspected from the clinical picture. The syndrome is further distinguished by the protracted course and the gradual subsidence of all subjective symptoms and of nearly all the objective findings. The process hitherto classed as tuberculosis of the neck of the femur probably belongs in this category, as also many cases of supposed tuberculous hip-joint disease, published as having been cured by this or that treatment. He advocates and has constantly applied a plaster dressing to spare the joint, applying it with the leg abducted to the utmost under general anesthesia. After two or three months this is changed for a walking stirrup, and the plaster dressing is cut shorter and shorter. Massage and superheated air complete the cure. (See abstr. 174, May 2, 1914, p. 1444.)

68. **Focal Reaction in Hip.**—This article was summarized *July 11, page 203*, as it appeared elsewhere.

70. **Excessive Vascular Tonus.**—Münzer and Selig report a few cases which sustain their contention that contracted kidney is merely one manifestation of the results of thickening of the walls in the precapillary arterial system. It may finally obstruct the lumen completely in the finest of these vessels, augmenting the blood-pressure and entailing hypertrophy of the heart. The term "contracted kidney" should be discarded for "vascular hypertony of the kidney" as the former is based on a mistaken conception of the cause.

Monatsschrift für Geb. und Gynäk., Berlin

July, XL, No. 1, pp. 1-186

73 Effect of Hypophysis Extract on Uterine Contractions in Labor. (Wirkung des Pituitrins auf die Uteruskontraktionen unter der Geburt.) M. Malinowsky.
74 Treatment of Extra-Uterine Pregnancy Rupturing During the Early Months. J. Olow. To be concluded in No. 2.
75 Chorio-Angioma. O. Nebesky.
76 Quadruplets from Four Ova with a Discussion of Quadruplet Births in General. E. Brattstrom.
77 Primary Carcinoma of Bartholin's Gland. J. Fabricius.

Münchener medizinische Wochenschrift, Berlin

July 7, LXI, No. 27, pp. 1489-1544

78 New Experiments on the Reactions of Plants and Animals to Light. (Lichtreaktionen bei Tieren und Pflanzen.) C. Hess.
79 Roentgenoscopy of the Appendix. H. Rieder.
80 Experimental Analysis of Kidney Functioning. (Funktion der Niere.) E. Leschke.
81 Increased Acid Content of Blood in Uremia. (Azidose des Blutes bei Uramie.) H. Straub.
82 *The Proteolytic Index in Serodiagnosis. (Ueber Abbau von Kasein durch Blutserum.) L. Flatow.
83 No Practical Value to the Skin and Conjunctival Tests for Pregnancy. D. A. de Jong.
84 Color Test with Dialysis Serodiagnosis. (Kolorimetrische Bestimmungsmethode der mit Triketohydrindenhydrat reagierenden Verbindungen.) E. Herzfeld.
85 Regeneration of the Cornea. (Abstammung der Keratoblasten bei der Regeneration der Hornhaut.) Salzer.
86 *Very Small Salvarsan Doses in Treatment of Secondary Anemia and Nutritional Disturbances. K. Kall.
87 Albumin Milk a Great Progress. (Erfahrungen mit Eiweissmilch.) A. Lichtenstein.

82. **Abderhalden's Dialysis Test Applied with Casein.**—Flatow remarks that the use of a standard solution of casein for the Abderhalden test does away with all possibility of error from traces of blood in the organ extract, and permits calculation of a proteolytic index for estimating and recording the protective ferments in a given serum. He remarks that time has confirmed his views as to the non-specific nature of these ferments. It is only a question of the degree of the digestion. He has applied various tests in twenty cases and found the results concordant in all with the casein solution. The standard casein solution is made by soaking 1 gm. casein in 3.5 c.c. decinormal sodium bicarbonate solution until it has softened and then 16.5 c.c. water is added and toluol to keep it sterile. The "proteolytic index" is the increase in the percentage of nitrogen in the dialysate of the serum plus casein solution, compared with the dialysate of the "serum alone," after dialyzing for fifteen hours. The quantities used are 1.5 c.c. serum in each tube and 0.2 c.c. of the casein solution with 20 c.c. of water to dialyze into. The nitrogen content of the dialysate is determined by Pregl's "microkjeldahl" method. In 5 pregnant women the increase was from 46 to 90 per cent. while in five controls, including one or two men, the increase was from 32.5 to 48 per cent.

86. **Very Small Doses of Salvarsan in Treatment of Secondary Anemia and Nutritional Disturbances.**—Kall has treated fifty-five patients of this kind with minute doses of salvarsan, never over 0.05 or 0.075 gm., as a simple and harmless method of giving arsenic and found it extremely effectual in increasing the weight, and it improved the blood-picture and subjective symptoms in all forms of secondary anemia and mild tuberculosis. He gives from ten to fifteen injections and repeats the course after an interval of a few weeks.

Therapie der Gegenwart, Berlin

July, LV, No. 7, pp. 289-336

88 *Prognosis with Arteriosclerosis of the Heart. G. Klemperer.
89 Treatment of Diabetes Mellitus. Forster.
90 Isolated Primary Tuberculous Focus in Fascia of Upper Arm. W. Pohl.
91 *Dislocation of Peroneus Tendon. Muskat.
92 Consensus of Opinion on Friedmann's Treatment of Tuberculosis. (Klinische Erfahrungen über das Friedmannsche Tuberkulosemittel.) F. Klemperer.
93 *Radiotherapy in Blood Diseases. (Strahlentherapie der Blutkrankheiten.) H. Hirschfeld.

88. **Prognosis in Heart Disease.**—Klemperer remarks in the course of this postgraduate lecture that the tortuous course of the temporal arteries has absolutely no prognostic import, and that the blood-pressure at the wrist may vary under emotional impulses and thus have no bearing on the prognosis. He adds that almost the same can be said of intermittent claudication; he has patients with this for seven years without evidence of progression of any cardiovascular trouble, and several who have thrown off completely the tendency to intermittent limping. Even gangrene of the toes does not shorten life as it may heal with or without an operation. Cerebral complications are more dangerous, but small hemorrhages may be reabsorbed; he has several patients still living ten to twelve years after their first "stroke." Tinnitus may prove very persisting; he has a patient now 91 who has had tinnitus constantly since the age of 64. Large doses of sodium iodid, not less than 2 or 3 gm. a day, kept up for six or eight weeks, have arrested syphilitic aortitis almost invariably in his experience when treatment was applied in an early stage. Mercurial inunctions might be used instead of the iodid. Moderation in all things, repose and an equable philosophic view of life are essential elements in the prognosis just as the restless ambition spurring to constant efforts, may often be regarded as one and the main cause of the arteriosclerosis.

91. **Habitual Dislocation of Peroneus Tendon.**—Muskat reports dislocation of the peroneal tendons accompanying flat-foot. Both feet were affected, and he restored conditions to approximately normal without an operation, cast or plaster bandage. An insole and inheel kept the foot in extreme supination. A stout elastic band inside the shoe, correspond-

ing to the course of the fibula prevented the tendon from slipping past the malleolus. During the night a leather gaiter was worn which held the leg and foot in extreme supination and had an irritating action on the periosteum, stimulating it to throw up a protecting barrier. The parts were all stimulated with massage, electricity, etc., and a complete cure was thus realized. The patient has had no recurrence of the trouble, not even in mountain climbing.. Muskat compares with this some published operative cases and urges others to report their experiences to decide the question as to the superiority of operative or non-operative measures.

93. **Radiotherapy in Blood-Diseases.**—Hirschfeld has had a number of favorable experiences with Roentgen exposures of the enlarged spleen in myeloid leukemia. The magic effect may be realized in a few weeks, the huge spleen subsiding to its normal size and sometimes without any symptoms; in other cases there may be pains probably from adhesions. The general health improves remarkably and leukemic retinitis, priapism, deafness or vertigo may subside entirely. This favorable outcome was realized in 20 or 30 per cent. of his cases, and generally in the cases of shorter duration. But some improvement under the radiotherapy is evident in nearly every case. Lymphatic leukemia is less easily influenced but even in this he has had better success in some instances than with any other treatment. He has sometimes found radium succeed when Roentgen treatment had failed. In one case, under ten radium exposures the whites dropped from 500,000 to 12,500 and the spleen, which had filled half the abdominal cavity, subsided until it could scarcely be palpated under the costal arch. The formerly bed-ridden patient feels almost entirely well and takes long walks. The trouble in this case was a recurrence. A lymphogranuloma, rebellious to the Roentgen rays, promptly subsided under mesothorium in one case. In pernicious anemia remarkable results were sometimes obtained under small, merely stimulating doses of thorium X, but as a rule it proved less effectual than arsenic. The outlook with acute leukemia is less promising. He states that he does not know of an instance in which the slightest benefit from roentgenotherapy was evident in acute leukemia.

Wiener klinische Wochenschrift, Vienna

July 9, XXVII, No. 28, pp. 1013-1052

94 *The Clinical Importance of Blood-Dust. (Die klinische Verwertbarkeit der Hämokonien.) O. Weltmann.
95 *Nature and Treatment of True Epilepsy. G. C. Bolten.
96 *Vagotony. H. Neugebauer.
97 Roentgenoscopy of the Stomach. (Tastsonde für die Röntgenuntersuchung des Magens.) G. Kelling.
98 Gaseous Phlegmons. W. Goldschmidt.
99 Industrial Diseases in Hungary. (Gewerbe-Pathologisches aus Ungarn.) H. Pach.

94. **Blood-Dust in Diagnosis of Liver Disease.**—Weltmann here reports from the third university medical clinic at Vienna, in charge of Chvostek, 105 cases of various affections in which the test for blood-dust or hemoconiae in the blood was applied (as described in THE JOURNAL, June 6, 1914, p. 1848). He tabulates the findings the fourteenth, second and third and fourth hours after the butter test meal (50 gm. of butter on bread). Classifying them according to the proportionate content in blood-dust, shows that the cases with little or no blood-dust after ingestion of butter, were all cases of liver disease. A delay in the appearance of blood-dust in the serum after the butter test meal indicates disturbance in the functioning of the liver. Complete absence of blood dust or very small proportions seems to be a sign of more or less complete obstruction of the biliary passages; it is as significant in this respect, he states, as clay-colored stools.

95. **Epilepsy.**—Bolten has devoted ten years more or less to the study of true epilepsy, that is, excluding all forms of epilepsy for which some cause was apparent. His research has established, he thinks, that essential epilepsy is the result of auto-intoxication from lack of the normal ferment processes in the intestines and disturbance in the intermediate metabolism from lack of normal functioning in the thyroid and parathyroid bodies. By supplying the active principle of these glands in juice squeezed out of the glands, it is possible, he declares, to arrest completely all the manifestations of true epilepsy, as he has succeeded in doing in a whole series of cases. The production of the proper ferments is stimulated by the treatment, metabolism is corrected into normal paths, and the epilepsy is clinically cured. He reviews the literature and compares various data, with other arguments to sustain his contention, and points to his cured cases as the final proof although he gives no details as to the actual cases he has treated in his practice at The Hague.

96. **Vagotony.**—Spitzig's article on vagotony in THE JOURNAL, Jan. 31, 1914, p. 364, describes the main features of this condition of overstimulation of the autonomic system, but Neugebauer here adds other clinical pictures of this state and reports effectual treatment. He states that patients with this hypertonicity of the vagal tract are generally comparatively young, of weakly constitution, with signs of status hypoplasticus. The stools generally consist of hard lumps in diarrheic soft feces. The sexes are about equally involved. There is flushing of the face, general or in patches. Dermographism may be so pronounced that words written on the back are plainly perceptible for half an hour. The bradycardia fluctuates with position; it may be 48 reclining and run up to 100 on rising, gradually settling down to 60 or 72, as in a soldier recently in his care. Pressure on the eyeball may slow the pulse to 36 or less, and in several young soldiers the radial pulse stopped completely and no heart-beat was audible for ten or twelve seconds; by the sixth second the man dropped unconscious. Relieving the eyeball from pressure, the heart-beat started up again, with profuse perspiration, but the bradycardia persisted afterward for some time. During the syncope and afterward, respiration was rapid and shallow. In two cases there was no syncope but extreme nausea and vomiting in one. The fact that the above symptoms are due to the abnormally low nervous threshold in the vagus system is proved by their subsidence under atropin. A systematic course of atropin trains the vagus out of its morbid overexcitability and approximately normal conditions may be permanently restored as in a case he describes at length in which by exclusion the trouble was differentiated as vagotonic cardiospasm.

Similar permanent benefit is also derived in vagotonic dysmenorrhea. Menstruation occurs usually at three-week intervals, accompanied by severe pains in the pelvis and sacral region. In a typical case reported a woman of 28 was confined to bed for five or six days at each menstruation by the pains and excessive menstrual flow. The pulse was 108 and the large intestine was hard and tender nearly throughout; the eyeball and forced inspiration tests were positive. She was given atropin, 0.5 mg. a day, in the form of a suppository, the first week; then 1 mg. the second and third week, and 2 mg. during the fourth week, then gradually decreasing at the same rate. The appetite improved, the intermenstrual period was four weeks, and the menstrual period lasted only three days, during which the patient was free from all disturbances.

Zeitschrift für klinische Medizin, Berlin

LXXX, Nos. 3-4, pp. 27-380. Last indexed July 4, p. 70

100 Congenital Heart Defects. L. Dünner.
101 *Serum of Thyroidectomized Goats in Exophthalmic Goiter. (Uebt das Antithyroidin eine spez. Wirkung gegenüber dem Morbus Basedowii aus?) C. Sonne.
102 Electrocardiographic Record over Long Periods. Karfunkel.
103 Neurofibromatosis. W. Lier.
104 Symptoms of Exophthalmic Goiter Occurring with Acute Infectious Thyroiditis. D. D. Pletnew.
105 Influence of Immoderate Smoking on the Heart and Vessels. (Einfluss des Nikotins auf die Gefässe und das Herz.) J. Pawinski.
106 *Estimation of the Functional Capacity of the Pancreas. A. Landau and A. Rzasnicki.
107 Hematology of Small-Pox and Vaccinia. M. Schatzmann.
108 Left Auricular Flutter. (Ueber isolierte Vorhofstachysystolie—linkseitiges Vorhofsflattern.) O. Roth.
109 Granular Form of Tuberculosis Virus. G. Brückner.
110 Albumin Content of Sputum. G. Brückner.
111 Leukemic Lymphomatosis with Paroxysmal Hemoglobinuria. G. Gali.

101. Antithyroidin in Basedow's Disease.—Sonne reports his experience with 80 cases of exophthalmic goiter in which he administered, more or less systematically, tablets made from the blood or serum of thyroidectomized goats. The results observed, he says, suggest that any benefit derived can probably be explained by suggestion. The thyroids were removed from 87 goats for the purpose and 35 developed myxedema and lived only about fourteen months on an average. No difference in the therapeutic action of the antithyroidin from these goats was apparent in the extensive clinical tests. The details of 23 clinical cases are tabulated in which courses of each were given; that is, antithyroidin from the operated normal and from the operated myxedematous goats or horses. Improvement was noticed after each in some cases, and aggravation after each in others.

106. Estimation of Pancreas Functioning from Regurgitation of Duodenal Contents into the Stomach.—Landau and Rzasnicki have examined the stomach content for pancreas ferments after a test-breakfast in sixty-eight cases and found considerable amounts of trypsin in 55 per cent. of the cases. It was thus possible with the ordinary stomach tube to determine that the pancreas was secreting adequate amounts of its juice. Negative findings are not conclusive as to pancreas functioning. The duodenal tube may bring up trypsin when none can be found in the stomach, and this test should be applied in all dubious cases. The secretion of trypsin, diastase and lipase does not proceed regularly for each, and consequently each must be determined separately to obtain a correct oversight of how the pancreas is working. The findings are tabulated, the cases classified according to the affection in each. The list includes 10 with cancer and one with a fistula into the pancreas. In a second communication they present clinical evidence which shows beyond question that the diastase in the saliva and that in the pancreatic juice respond exactly alike to chemical tests. Hence examination of stomach content for regurgitated pancreatic diastase is absolutely futile, owing to the presence of saliva in the stomach content.

Zentralblatt für Chirurgie, Leipsic

July 11, XLI, No. 28, pp. 1177-1208

112 *Direct Access to Upper Esophagus. (Zur Freilegung des Brustabschnittes der Speiseröhre.) L. Dreyer.
113 Plastic Operation on Dog's Aorta. (Das endgültige Resultat einer Aortenplastik aus der Carotis desselben Tieres.) E. Jeger, H. Joseph and F. Schober.
114 *Occult Blood in the Feces. A. Wagner.

112. Access to the Upper Esophagus.—Dreyer has been making a study of the best means of direct access for operations on the upper esophagus, and states that nine-tenths of the diameter of the esophagus is more accessible from the right than from the left. In two cases of exploratory thoracotomy recently he found that the descending aorta hid the esophagus on the left while it lay exposed on the right side. The only large vessel that crosses the gullet on the right is the azygos vein which is easily separated from it. The ribs have to be resected for quite a stretch, of course, and to avoid mechanical disturbances afterward he bridged the gap on each rib with a plate of aluminum. This restored the wall to all effects and purposes and aided materially in the smooth recovery in his two cases; unfortunately in both the cancer was found inoperable, so the thoracotomy was merely exploratory.

114. Dry Test for Occult Blood in Stools.—Wagner has simplified the benzidin test so that it can be applied without an ether extract and thus much more conveniently, as all that is necessary is to take up a little of the solid stool on a match, smear it on an object glass and pour the reagent over it. It turns blue if there is blood present and there is no misleading green tint from fluid. The reagent is the usual Schlesinger-Holst mixture: A knife-tip of benzidin; 2 c.c. of glacial acetic acid, and 20 drops of a 3 per cent. solution of hydrogen dioxid. By this dry technic there is no danger of soiling the fingers, and the test is more sensitive than the usual "wet" benzidin test. The smear of stool is either blue or it is not. The rapidity of the color change gives some idea as to the proportion of blood in the stools; with much present the change to blue is *instantaneous*.

Zentralblatt für Gynäkologie, Leipsic

July 11, XXXVIII, No. 28, pp. 985-1016

115 *Improved Technic for Ovariectomy. H. Freund.
116 *Chorea during Pregnancy. W. Kolde.
117 *Differentiation of Maternal and Fetal Blood Stains. P. Perazzi.

115. Improved Technic for Conservative Ovarian Operations.—Freund has been applying for over three years a method of conservative resection of benign ovarian cysts and other tumors which permits retention of a certain amount of ovarian functioning and thus the women were spared all symptoms of the artificial menopause. Although none of his patients has passed through a pregnancy since, yet he thinks that conception may occur after this method of operating. He slits the tumor its entire length by a median incision and thus is able to inspect the ovary completely and detect any scraps of normal tissue still left. If no scraps are found then the operation has to be a complete ovariectomy, but as a rule enough can be discovered in this way and left behind to maintain ovarian functioning in appropriate cases.

116. Chorea Gravidarum.—Kolde's patient was a young woman approaching term and the chorea was of an intensely severe type. It had commenced about two weeks before, after several syncopes. Morphin had no effect on the choreic movements and she had been unable to get any sleep for three nights. Kolde punctured the fetal membranes which was followed at once by labor pains and delivery in a few hours of a healthy child. During the second stage of labor the choreic movements were so violent that the woman had to be held by two attendants. She became quieter then at once and under 2 gm. of chloral fell asleep. The chorea subsided so rapidly after this that scarcely a trace was left by the fourth day.

117. Differentiation of Maternal and Fetal Blood-Stains.—Perazzi confirms Volhardt's statements in regard to the reliability of the Neuman method of distinguishing between blood-stains by the fat and lipoid content. (It was described in The Journal, July 4, 1914, p. 71.) Perazzi found the reaction as distinct with old blood-stains as with fresh blood, even when they had been exposed to the sun for weeks or to a heat of 150 C. He advises to weigh the flake of blood on the linen before applying the test. Also to test the woman's blood, in medicolegal cases, with both the old stain and the fresh blood.

Grèce Médicale, Athens

XVI, Nos. 7-12, pp. 13-24

118 *Firearm Wounds of Nerves. A. Antipas.*

Rivista Ospedaliera, Rome

June 15, IV, No. 11, pp. 505-560

119 *Cerebellar Ataxia in Children. (Le sindromi cerebellari nei bambini.) L. Concetti.

119. Cerebellar Ataxia in Children.—Concetti emphasizes the importance of publishing cases of this kind, and contributes 1 of the type due to defective or arrested development; 7 of the type due to acute infectious toxic processes, and 2 due to degeneracy or progressive involution. With either of the above the process may extend to involve other parts of the cerebrospinal system, with the resulting syndromes. This does not occur with tumors, hemorrhage, thrombosis and softening. In his case of the first type, in a boy of 3½, gradual improvement was evident under thyroid treatment, bromids, iodids, calcium chlorid, valerian, mercurial inunctions, hydrotherapy and massage. Occasional flaccid paralysis of the arm or leg was the first sign of trouble, soon after birth; the paralysis lasted for a few minutes or days and then subsided for a time, and finally came to alternate with epileptiform convulsions. Even at the best the gait was like that of a drunken man with a constant tendency to fall, but improvement was realized under the measures mentioned above while the child was for several months in the clinic and it has continued to progress during the two years to date. He can now walk alone although still somewhat hesitatingly. Improvement was also realized under treatment in the 7 infectious cases: the ataxia followed typhoid, measles or pneumonia, or the child or the parents were alcoholic. No benefit was apparent in the degeneracy cases.

Brazil Medico, Rio de Janeiro

XXVIII, Nos. 23-24, pp. 221-240

120 *Clinical Study of Pyelonephritis. A. Pereira.

120. Pyelonephritis.—Pereira states that in fully 50 per cent. of his cases of acute gonorrhea he found the kidney pelvis also the seat of inflammation, revealed by the paraumbilical pain, elicited when the fingers are worked down toward the spine, just below the rectus muscle, on a line with the umbilicus, during expiration. Omission of this test may allow an unsuspected acute pyelitis to pass into a chronic phase. This is particularly likely in women with acute gonorrhea. Catheterization of the ureters may be required for a positive diagnosis, as he shows by a number of case reports. Cystoscopy usually differentiates the gonorrheal from tuberculous kidney trouble.

The prognosis of pyelonephritis usually depends on the length of time it has been installed, and the permeability of the ureters. He insists that local measures should not be applied to the urethra for acute gonorrhea when there is pyelitis, as the local measures are liable to increase by reflex action the congestion in the kidneys, thus aggravating the inflammation in the kidney pelvis. Bed rest should be imposed, keeping the patient's strength up on a milk-vegetable diet until the second glass of urine becomes limpid. This, he adds, may be counted on to ward off chronic pyelitis.

The chronic form once installed should be treated by dieting, hexamethylenamin or other disinfectant for the urine and tonics. In his experience, local applications of a disinfectant to the kidney pelvis cured in the recent cases and not in the others, while this could be accomplished equally well with the above medical, without local, measures. Relapses of an old pyelitis are common under any and all treatment and require repetition of the course. The pyelonephritis of pregnancy, he adds, is probably often merely the recrudescence of an old gonorrheal pyelitis which may have developed without attracting attention at the time and persisted latent until roused by the pregnancy.

Nederlandsch Tijdschrift voor Geneeskunde, Amsterdam

LVIII, No. 10, pp. 697-781

121 *Hearing Capacity of Schoolchildren. K. van der Wal.
122 Abuses of Workingmen's Compensation. (Misbruik en ongewenscht gebruik der ongevallenwet.) J. A. Korteweg.

No. 11, pp. 782-864

123 Rumination in Human Beings; Two Cases. (Over herkauwen bij den mensch en meer in het bijzonder bij den zuigeling.) J. C. Schippers.
124 *Simple Test for Diacetic Acid in the Urine and of the Degree of Acidosis in Diabetics. (Bepaling van den graad der zuurvergiftigung bij suikerziekte.) F. A. Steensma and J. Koopman.

121. The Hearing of Amsterdam Schoolchildren.—Van der Wal found normal hearing in 89.2 per cent. of the 7,433 children examined, and removal of impacted wax and of adenoids added materially to this percentage. After treatment of chronic otitis media a number of the children regained practically normal hearing. He found more or less deafness in 25.6 per cent. of the most backward children, and in 14.1 per cent. among the moderately backward, while the proportion was only 9.4 per cent. among the normally intelligent pupils. He comments on the unreliability of the teachers' estimates as to the hearing capacity of individual pupils.

124. Estimation of Degree of Acidosis in Diabetes.—Steensma and Koopman state that the simple bedside technic they describe will reveal even slight acidosis, and can be relied on as they show by tabulated comparative from their own experience with various methods. of urine is mixed with 2 or 3 drops of glacial a and 1 c.c. of a 0.5 per cent. solution of starch. Th of 1 per cent. tincture of iodin is added. Norn then turns blue. When no blue tint is apparent, for a minute, the presence of diacetic acid is rev graduating the tint in a set of test-tubes it is po estimate the degree of acidosis. They regard this t the most convenient for the purpose known to d state that it is not affected by the presence in the albumin, sugar, acetone or urobilin. [It is a sli cation of Ondrejovich's technic (published in *D Wchnft.*, 1912, xxxviii, 1413). A recent article on th technic by F. Rietti extols it as exceptionally con reliable with the only drawback that indican gives tive reaction as well as diacetic acid. (*Rivista Clin. Med.*, 1914, xv, 417).]

Hospitalstidende, Copenhagen

July 8, LXII, No. 27, pp. 843-864

125 *Dangers from Radium Treatment of Cancer. (Er rad ling af operable Kræftsvulster tilladelig?) T. Rovsing.

125. Radium Promotes Instead of Checking Cancer. is the conclusion which has been forced on Rovsing tragic experiences in a number of cases in which hitherto indolent and benign superficial growths were into rapid malignant growth apparently by the expo radium. He states that he has been unable to find literature any authentic case of an actual cure of a under radium, but the chorus of encouraging reports ov his first misgivings and he began to apply radium him 1912. His extremely unfavorable experiences mad fear that his technic was at fault, so he took a Heidelberg to study the technic in vogue there and that he had been applying it strictly according to r every respect, and yet in many instances the exposur followed by the transformation of an indolent grc a rapidly gnawing cancer, becoming absolutely inop in the course of a few days. He gives the details such cases. They were selected for radium treatme account of the apparently peculiarly favorable cond for this. In one case a small tumor in the cheek—the rence of a carcinoma which had been excised less than months before—could easily have been removed, but seemed to invite radium treatment this was applie twenty hours. The tumor became in a few days absc inoperable and all were convinced that this was the result of the radium exposure, especially as case after showed this same course.

The growth became intensely painful as a rule af radium exposure. This was particularly evident in th of a man of 29 who had been given radium treatme Omaha for a suspicious lump on his lower lip notice two years. After the radium exposure the lump be grow rapidly and when it was then excised, rec rapidly followed. This occurred again after a second o tion. The small ulceration in the cicatrix and two enlarged glands under the jaw were then treated radium. The glands had been thus enlarged for two y without change but after the last radium exposure the w region at once became transformed into a rapidly cancer. Twice in the history of this case radium had applied when the lesion was small and readily op and each time the malignant disease seemed to have whipped up by the radium which the patient had ins on as he had heard so much of the "magic" efficacy radium treatment of cancer.

Ugeskrift for Læger, Copenhagen

LXXVI, Nos. 26-27, pp. 1143-1230

126 Diathermia. (Orienterende bemærkninger om diatermi.) J. Eliassen.
127 Simple Technic for Determination of Sugar Content of Urin E. Winslow.
128 Recovery after Removal of Intraspinal Tumor. J. Collin and K. Krabbe.